EPA'S STATEMENT OF POSTION IN RESPONSE TO GE'S JULY 2, 2012 STATEMENT OF POSTION REGARDING DISPUTE OF FY 2011 COST BILL

JULY 30, 2012

I. INTRODUCTION AND BACKGROUND

I.A Background Regarding the Current Dispute and the Decree's Dispute Resolution Procedures

In accordance with the Consent Decree ("CD" or "Decree") for the GE-Pittsfield/Housatonic River Site (the "Site"), on January 11, 2012 EPA sent the General Electric Company ("GE") a bill for approximately $1.6 million in costs allocated to U.S. Future Response Costs pursuant to Paragraph 95 of the Decree (the "FY 2011 Cost Bill"). EPA incurred[1] these costs on or before September 30, 2011 and such costs were not previously billed to GE. This was EPA's 13th annual cost billing of GE as provided for in the Decree. CD ¶ 100. On February 29, 2012, GE sent EPA a letter objecting to the FY 2011 Cost Bill. See Exhibit A of GE's Statement of Position. After unsuccessful attempts to resolve GE's dispute, on April 5, 2012 GE sent EPA a written Notice of Dispute. See Exhibit B of GE's Statement of Position. From that date through June 8, 2012, EPA and GE sought to resolve the dispute during an informal negotiation period pursuant to Paragraph 133 of the CD. The parties were unable to resolve the dispute informally; accordingly, based upon an agreement between EPA and GE regarding document submittal dates, GE served upon EPA a Statement of Position dated July 2, 2012. By serving its Statement, GE invoked the CD's formal dispute resolution process.

According to Decree Paragraph 135.b, after GE serves its Statement of Position, EPA must serve upon GE a Statement of Position. GE may submit a reply to EPA's Statement within 14 days after receiving EPA's Statement of Position. GE asserted, and EPA concurs, that this dispute should proceed pursuant to CD Paragraph 137. Pursuant to Paragraph 137.a, the Director of the Office of Site Remediation and Restoration ("OSRR"), EPA Region I, issues a final decision resolving the dispute, after reasonable opportunity for review and comment by the Commonwealth of Massachusetts. GE may appeal the decision of the OSRR Director to federal District Court. For reference, a copy of the Section of the CD governing dispute resolution is attached as Exhibit 1.

I.B Summary of EPA's Response to GE's Statement and Recommendation of EPA

The FY 2011 costs that EPA billed to GE primarily related to EPA's preparation, development, and review of a proposed remedy for the Rest of the River. As such, according to the terms of the Decree, they are recoverable from GE. Contrary to GE's claims, there is no language in the Decree or the RCRA Permit[2] that requires EPA to

[1] The Consent Decree includes a defined term, "Incur," which means "to incur and to pay costs." CD ¶ 4. For purposes of this Statement of Position, the term "incur" is used consistent with the Decree definition.

[2] The RCRA Permit is an Appendix to the Consent Decree and includes additional detail on the process for selecting and implementing a clean-up for the Rest of River. Documents related to the current RCRA

formally act on GE's Revised Corrective Measures Study ("RCMS") prior to recovering remedy preparation costs from GE. The costs that EPA incurred were entirely within the remedy selection process established by the Decree and RCRA Permit. In fact, the most logical and efficient course was for EPA to review the RCMS and begin preparing a proposed remedy prior to formally responding to GE on the RCMS. Accordingly, GE's arguments regarding a due process violation are meritless.

To resolve this dispute, however, EPA recommends reducing GE's FY 2011 Cost Bill by $393,192 by reallocating certain costs to other cost categories. This recommended reallocation is based upon the recognition, discussed below, that a small portion of time was spent on tasks that fall into the categories of Oversight or cross-cutting costs.[3] Accordingly, the recommended total amount that GE owes for Future Response Costs is $1,239,108.[4]

I.C Summary of Relevant Decree Provisions

1. Decree Cost Definitions

The CD provides that EPA may recover certain costs from GE. These costs are divided into nine cost categories. Three cost categories are relevant to this dispute: U.S. Future Response Costs, U.S. Oversight Costs, and U.S. Future Rest of River Capped Response Costs.[5] EPA's FY 2011 Cost Bill is for costs that EPA and the U.S. Department of Justice ("DOJ") incurred under the U.S. Future Response Costs category ("Future Response Costs").

In its Statement GE alleges that almost all of EPA's costs should be allocated to Oversight Costs and/or U.S. Rest of River Capped Response Costs ("Rest of River Response Costs"). These two categories have limitations on EPA cost recovery, and EPA has exceeded such limitations, or "caps," for each of those two categories. Thus, GE argues for reallocation of EPA costs that would render almost all of the $1.6 million in EPA costs unrecoverable.

The CD defines Future Response Costs (CD ¶ 4) as follows:

> all direct and indirect costs that EPA and DOJ Incur pursuant to the provisions of this Consent Decree, including but not limited to costs Incurred to enforce the Consent Decree (including dispute resolution), the costs incurred pursuant to Sections X (Review of Response Actions), XIII (Access and Land/Water Use Restrictions) (including the cost of attorney

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Permit are on the EPA website for the Site, including at http://www.epa.gov/region1/ge/cleanup/275773.pdf, and http://www.epa.gov/region1/ge/cleanup/275746.pdf

[3] As explained below, cross-cutting costs consist of a pool of costs allocated among several cost categories as they support tasks included in more than one cost category.

[4] This amount excludes interest and a credit for GE's 1 ½ Mile Reach costs.

[5] The Decree provides for limitations on EPA recovery of Oversight Costs and Rest of River Response Costs, but does not limit recovery of Future Response Costs.

> time and monies paid to secure access and/or to secure or implement land/water use restrictions, including the amount of just compensation)… non-field work costs incurred for preparing, reviewing, and approving the documents that propose and select the Rest of River Remedial Action (including responding to public comments thereto), and costs Incurred to develop plans or reports pursuant to the provisions of this Consent Decree that do not fall within the categories of costs excluded from U.S. Future Response Costs by the last sentence of this definition, together with any accrued Interest…U.S. Future Response Costs shall not include U.S. Oversight Costs, U.S. Future Rest of River Capped Response Costs, U.S. Future Additional Sampling Costs, U.S. Rest of River Oversight Costs, U.S. Post Removal/Groundwater Monitoring Costs, or the U.S. 1½ Mile Reach Removal Action Costs. CD ¶ 4.[6]

U.S. Oversight Costs, recovery of which is specified in Decree Paragraph 98.a, include, in relevant part, costs that EPA incurs for "reviewing proposals, reports, studies, and other deliverables submitted by [GE] under the [RCRA Permit], conducting shadow or supplemental studies to be conducted by [GE] under that Permit, and otherwise overseeing [GE's] activities under that Permit." CD ¶ 4.

U.S. Future Rest of River Capped Response Costs, recovery of which is specified in Decree Paragraph 96, include, in relevant part, costs that EPA incurs "in connection with studying or otherwise investigating the Rest of River and/or all field work to support the preparation, development, and selection of the Rest of River Remedial Action." CD ¶ 4.

2. Decree and RCRA Permit Provisions Related to Remedy Selection Timing and Process

As will be discussed below, the relevant Consent Decree and RCRA Permit provisions that address EPA's remedy selection process do not prohibit EPA from preparing a proposed remedy before EPA acts on the RCMS. For example, Decree Paragraph 22.n provides "[u]pon satisfactory completion of the [RCMS] Report in accordance with the [RCRA Permit], EPA will issue a Statement of Basis and a draft modification to the [RCRA Permit], which will set forth the proposed Remedial Action for the Rest of the River…" Note that this Paragraph refers to EPA's issuance of a proposed remedy, that is, the Statement of Basis, but says nothing about the preparation of EPA's proposed remedial action for the Rest of River.

The provisions of the RCRA Permit that address EPA's action on the RCMS (Permit Section II.H) merely govern EPA's approval or disapproval of the RCMS and do not limit EPA's preparation of a proposed remedy.

> After [GE] submits the [RCMS] Report, EPA will either approve,

[6] These costs are recovered pursuant to Paragraph 95 of the CD, so they are sometimes referred to as Paragraph 95 costs.

> conditionally approve or disapprove the Report. In addition to requiring additional [RCMS] work, a conditional approval or disapproval may include a requirement to conduct additional RFI work if such work is necessary to complete the [RCMS].
>
> If EPA disapproves the Report, EPA shall, within its discretion, either (1) specify the deficiencies and establish a time frame within which the Permittee shall submit a modified Report; or (2) make such modifications as EPA deems necessary to meet the requirements in Special Condition II.G above. RCRA Permit, § II.H.

I.D Standard of Review

As stated above, EPA concurs with GE that this dispute should proceed pursuant to Paragraph 137 of the CD. This paragraph is for disputes that "neither pertain to the selection or adequacy of any response action nor are otherwise accorded review on the administrative record." Paragraph 137.b provides that judicial review of any dispute governed by Paragraph 137 "shall be governed by applicable principles of law." The "applicable principles of law," however, do not support GE's argument that the parties are on a precisely equal footing and that EPA is entitled to no deference regarding any portion of the dispute. See GE's Statement, pgs. 5 and 6.

GE asserts that a reviewing court for this dispute should not give deference to either party. The court, however, should give deference to EPA's expertise regarding the process for selecting a remedy. Technical questions, such as the proper process for selecting a remedy, are within EPA's technical expertise to which courts typically defer. See Environmental Defense Fund v. EPA, 210 F.3d 396, 400 (D.C. Cir. 2000) (courts should defer to agency expertise on technical questions); Chemical Waste Management, Inc. v. EPA, 869 F.2d 1526, 1538 (D.C. Cir. 1989)(fundamental principle that on "a highly technical question...courts necessarily must show considerable deference to an agency's expertise.")(quotes and citations omitted). Thus, the court should give deference to EPA's technical decision, discussed below, that it should begin to prepare a proposed remedy prior to formally acting on GE's RCMS.

II. EPA'S RESPONSE TO GE'S ARGUMENTS REGARDING THE IMPROPER ALLOCATION OF COSTS

II.A Summary of GE's Argument Regarding the Improper Allocation of Costs

GE asserts that almost all of EPA's FY 2011 work that EPA billed to U.S. Future Response Costs is properly allocated to U.S. Oversight Costs or to U.S. Future Rest of River Capped Response Costs. GE argues that such work consisted of reviewing the RCMS, gathering information from the public regarding RCMS alternatives, and conducting shadow or supplemental studies for GE's RCMS. GE claims that until EPA acts on the RCMS, EPA's efforts are necessarily a review and evaluation of the RCMS

remedial alternatives. Accordingly, GE argues, such costs are U.S. Oversight Costs. In the alternative, GE asserts that some or all of EPA's costs should be allocated to U.S. Future Rest of River Capped Response Costs.

II.B EPA Response to GE's Argument

The FY 2011 costs that EPA billed to GE primarily related to EPA's preparation, development, and review of a proposed remedial action for the Rest of River. As such, they are properly allocated to the U.S. Future Response Costs category. The CD defines this category as "all direct and indirect costs that EPA and DOJ Incur pursuant to the provisions of this Consent Decree" including "non-field work costs incurred for preparing, reviewing, and approving the documents that propose and select the Rest of River Remedial Action (including responding to public comments thereto)." CD ¶ 4 (emphasis added). Thus, this cost definition expressly allows EPA to recover its direct and indirect costs from GE in preparing the Rest of River remedy. Further, the definition does not contain any language suggesting that EPA must first act on the RCMS before EPA can incur and recover remedy preparation costs. In fact, as discussed below, the efficient course of action was for EPA to begin preparing its preferred cleanup alternative prior to formal action on the RCMS.

As will be shown below, the vast majority of EPA's billed costs relate to EPA's initial preparations to select its preferred proposed remedy and not review of the RCMS or "shadow or supplemental" RCMS studies. GE has seriously mischaracterized the primary purpose of EPA's activities by selectively quoting from EPA's statements and presentations, when a fuller context demonstrates the true focus of the work and resultant incurrence of costs. Further, GE has no support for its argument that until EPA acts on the RCMS, EPA's FY 2011 work is "necessarily" related to a review of the RCMS remedial alternatives. As will be discussed in detail below, the CD contains no prohibition against EPA incurring costs to prepare a proposed remedy prior to acting on the RCMS, and EPA cleanup program regulations and guidance clearly provide the flexibility to do such remedy proposal preparation. The mere fact that EPA's legitimate remedy preparation costs were incurred prior to formal action on the RCMS does not prevent EPA from recovering such costs from GE or convert the nature of such costs into remedy evaluation costs. Also, as will be discussed below, the costs that EPA billed to GE are not U.S. Future Rest of River Capped Response Costs. Importantly, the impact of GE's argument, if accepted, would be to take nearly the entire $1.6 million bill from the Future Response Cost category, for which recovery remains authorized, and move it into other cost categories for which the recovery limitations have been exceeded.

It is significant to note that, as shown by its cost summaries, EPA incurred more costs in FY 2011 in the capped Oversight Cost category than it did in the uncapped Future Response Cost category. Specifically, for FY 2011, EPA did not bill GE for $2,073,143 in costs that EPA incurred. Of this amount, $2,054,863 were costs that EPA allocated to

U.S. Oversight Costs, a cost category with a cap that has been exceeded.[7] Thus, in the original cost bill, EPA only billed GE for 44% of the costs that it had incurred in FY 2011. Moreover, over the life of the Decree, EPA has incurred approximately $55 million in Oversight Costs and Rest of River Capped Response Costs that EPA has not billed GE.[8] (This $55 million amount includes approximately $13.3 million in indirect costs and does not include 1 ½ Mile Reach costs that EPA incurred but did not bill GE.)

In connection with GE's dispute, EPA reviewed and divided the $1.6 million in costs that EPA billed GE into categories of costs by specific activities and by employees that performed work related to the Site. A table showing these categories and the costs that EPA has allocated to each category is attached as Exhibit 2. EPA then further analyzed the work performed for each category to determine whether, based upon the work performed, it should recommend that any portion of the work in a category be allocated to a cost category other than Future Response Costs. Although EPA has recommended a reallocation of costs in some categories, the vast majority of EPA's FY 2011 activities were related to the preparation and review of the proposed Rest of River Remedial Action and are properly Future Response Costs. Below is a discussion of each cost line item and the rationale regarding the allocation of each cost line item. A summary chart showing this allocation is inserted below.

U.S. Department of Justice ("DOJ") Costs: $87,000

As noted above, recoverable Future Response Costs include "all direct and indirect costs that EPA and DOJ Incur pursuant to the provisions of this Consent Decree, including but not limited to costs Incurred to enforce the Consent Decree." CD ¶ 4. DOJ incurred such costs in FY11 for enforcing, and in anticipation of enforcing, the Consent Decree. DOJ costs are not capped by the Decree. For example, DOJ costs do not belong in Future Rest of River Costs or Oversight Costs because these costs in these two categories relate to costs that EPA has incurred. DOJ is not included in such cost definitions. Accordingly, the exclusions and provisions of such cost definitions do not apply to DOJ. DOJ has properly incurred these costs pursuant to the Consent Decree. As will be discussed below, GE's argument that DOJ's costs were incurred "outside the prescribed process" of

[7] Such oversight costs were incurred for EPA's review of GE's RCMS and review of the informal public comments on the RCMS, as well as oversight of GE's removal actions outside the Housatonic River (including GE's groundwater actions).

[8] For Oversight Costs, GE was required to pay EPA 100 percent of such costs not exceeding $7 million, 75 percent of such costs exceeding $7 million and not exceeding $9 million, 50 percent of such costs exceeding $9 million and not exceeding $12 million, and 33 1/3 percent of such costs exceeding $12 million but not exceeding $15 million. CD ¶ 98.a. EPA's incurrence of Oversight Costs has exceeded $15 million since FY 2008. Therefore, EPA has not attempted to recover from GE the $2,054,863 incurred by EPA as Oversight Costs in Fiscal Year 2011. For Rest of River Response Costs, the limitation is as follows: GE was to pay EPA 100 percent of such costs not exceeding $11 million, and 50 percent of such costs exceeding $11 million and not exceeding $18 million, with no GE obligation to pay such costs that exceeded $18 million. CD ¶ 96. EPA's incurrence of Rest of River Response Costs has exceeded the $18 million threshold since entry of the Decree. Therefore, EPA has not attempted to recover from GE the approximately $18,280 incurred by EPA as Rest of River Response Costs in FY 2011

the CD is meritless. Accordingly, EPA is seeking to recover $87,000 for this cost category.

EPA National Remedy Review Board and Contaminated Sediments Technical Advisory Group ("CSTAG") Costs: $407,700

These costs relate to EPA's National Remedy Review Board's (RRB) review of EPA's proposed remedy, which occurred in the summer of 2011. This Board was established by EPA in 1995 to promote consistent and cost effective cleanup decisions and to ensure that proposed remedy approaches are consistent with law, regulations, policy and guidance. The RRB evaluates the proposed cleanup approach for any site where the potential remedy costs exceed $25 million, which is the case with the Rest of River project. For proposed cleanups at complex contaminated sediment sites, EPA policy is for representatives of EPA's Contaminated Sediments Technical Advisory Group ("CSTAG") to coordinate with and participate in the RRB review, including the review for this Site. The costs incurred with respect to the RRB/CSTAG review include EPA Region 1's preparation for the RRB review, Region 1's presentation to the RRB, and the costs incurred by the members of the RRB and CSTAG who participated in the review.

GE completely mischaracterizes the purpose of the RRB review. As its very name implies, the purpose of the RRB's evaluation was to review EPA's proposed remedy. After the Region's review of the RCMS, public comments on the RCMS, and the community involvement sessions, the Region presented its cleanup proposal to the RRB and the CSTAG. The primary purpose of the RRB process was to evaluate the Region's proposed preferred alternative and not to evaluate the RCMS alternatives. The RRB review was one step in the Region's remedy preparation. EPA, consistent with EPA policy and guidance, presented a developed proposed remedy to the Board and not, as GE argues, "shadow or supplemental" studies of RCMS cleanup alternatives.

EPA guidance related to the RRB clearly indicates that the primary purpose of the Board is to review remedies. The purpose of the RRB is to help control remedy costs and to promote both consistent and cost-effective decisions at Superfund sites. See, Elliott P. Laws, *Formation of National Superfund Remedy Review Board,* November 28, 1995, page 1 (http://www.epa.gov/superfund/programs/nrrb/11-28-95.htm). The goal of the Board is to ensure sound decision-making consistent with current law, regulations, and guidance. Id. at page 2. Achieving these goals entails review of proposed remedies before they are released for public comment. Id; also see RRB website, http://www.epa.gov/superfund/programs/nrrb/index.htm ("[RRB] reviews proposed Superfund cleanup decisions"); *National Remedy Review Board Criteria Revision*, March 21, 2005, OSWER 9220.0-27, page 1 (RRB "will review proposed cleanup plans"). The RRB guidance clearly indicates that the purpose of the Board is to review a proposed remedy and not merely the alternatives in a feasibility study.

EPA created the CSTAG to "monitor the progress of and provide advice regarding a small number of large, complex, or controversial contaminated sediment Superfund sites." Page 10, *Principles for Managing Contaminated Sediment Risks at Hazardous*

Waste Sites, February 12, 2002, OSWER 9285.6-08. The group, comprised of EPA regional and headquarters experts, encourages national consistency and the appropriate investigation and management of sediment sites. See *Operating Procedures for EPA's Contaminated Sediments Technical Advisory Group,* updated March 19, 2008 (http://www.epa.gov/superfund/health/conmedia/sediment/procedures.htm). Although the CSTAG can be involved in many stages of a site, in FY 2011, the primary reason for EPA CSTAG members to bill costs to the Site was for their review and comment on EPA's proposed remedy. The CSTAG review was coordinated with the RRB's review of proposed remedies, and the CSTAG members attended the RRB meeting. See *OSRTI Sediment Team and NRRB Coordination at Large Sediment Sites,* March 5, 2004, OSWER Directive 9285.6-11 and *Changes to the Roles and Responsibilities of the Contaminated Sediments Technical Advisory Group (CSTAG),* September 9, 2009, OSWER Directive 9285.6-20.

Clearly, as described above, the majority of RRB/CSTAG costs are recoverable as they were incurred for "preparing, reviewing, and approving the documents that propose and select the Rest of River Remedial Action." CD ¶ 4 (Future Response Costs definition). In recognition that a small portion of this RRB/CSTAG time was spent reviewing or discussing the RCMS, however, EPA recommends that 10% ($40,770) of the total costs in this category be allocated to Oversight Costs. Accordingly, EPA is seeking to recover $366,930 for this cost category.

Situation Assessments, Workshops, and the Charrette Costs: $523,700

In FY 2011, EPA conducted community outreach to help prepare a proposal for remedial action for the Rest of River. EPA first hired a contractor to conduct a Situation Assessment to interview the public regarding their views of the cleanup process, information needs, and concerns. Based in part on the findings from the interviews, EPA then held three mini-workshops to provide information to the public. The workshops focused on the nature of the Housatonic River; PCBs, risks, and modeling; and remediation and restoration technologies. Finally, EPA held a full-day, interactive community workshop, known as a "Charrette," to gain public input and discuss the Rest of River cleanup. The costs in this category consist of EPA employee and contractor labor and travel.

Contrary to what GE argues, the primary purpose of these activities was to support EPA's preparation of a remedy. The community outreach materials make clear that at the time of the outreach EPA had moved into decision-making related to EPA's proposed remedy and not a mere review of RCMS alternatives. The events before and after the community outreach also show this to be the case. GE submitted its RCMS in October 2010. EPA then solicited informal public comments on the RCMS from November 2010 to January 31, 2011. EPA received a significant number of public comments on the RCMS. See http://www.epa.gov/region1/ge/thesite/restofriver/reports/cms/477441.pdf. After conducting its own review and receiving public comments on the RCMS, EPA began to develop a proposed preferred cleanup alternative. EPA's presentation to the CCC in March of 2011 indicates that EPA was beginning decision-making. See pg, 4, Exhibit 3.

("The Charrette will be held during EPA's decision-making process.") The goal was a proposed remedy for public comment in the fall of 2011. Id. at page 7. The outreach materials also show that EPA had initiated decision-making for selection of a proposed remedy. For example, the Workshop Website states that "EPA is beginning its decision-making process for the cleanup of the Housatonic Rest of River." Exhibit 4, (http://housatonicworkshops.org/background.html). Two fact sheets that EPA issued in April 2011 evidence a similar intent: "EPA is beginning its decision-making…" and "…EPA is developing its preferred remedial alternative or set of alternatives." Exhibit 5, also see letters from the Regional Administrator attached as Exhibit 6. After these community outreach efforts, EPA presented its proposed preferred cleanup alternative to the RRB in July 2011.

These events and statements make clear that the primary purpose of the outreach was to provide information to the public and obtain its input regarding a preferred cleanup option. The purpose was not to evaluate RCMS alternatives or to conduct a "shadow or supplemental" study to the studies that GE was required to perform under the RCRA Permit. This outreach was inherently part of EPA's remedy preparation and not, as GE claims, part of the process of evaluating the RCMS. EPA had already obtained public comment on the RCMS prior to the community outreach. After receiving such comments, EPA would not need to conduct a significant and time-intensive public outreach effort solely to obtain comments on RCMS alternatives. In fact, as was clearly stated, EPA was meeting with the community to inform its proposed remedy selection -- not to review RCMS alternatives.

These costs are recoverable as they are "non-field work costs incurred for preparing, reviewing, and approving the documents that propose and select the Rest of River Remedial Action." CD ¶ 4 (Future Response Costs definition).[9] In recognition that a small portion of this time was spent reviewing or discussing the RCMS, however, EPA recommends allocating 20% ($104,740) of the total outreach costs in this category to Oversight Costs. Accordingly, EPA is seeking to recover $418,960 for this cost category.

CCC/Systems Research Applications Corporation ("SRAC") Costs: $27,600

These costs relate to scheduling, facilitating, and summarizing meetings of the Citizens' Coordinating Committee ("CCC"). In 1998, EPA established the CCC at this Site to inform and obtain public input on the Site's cleanup efforts. Community outreach to the CCC is expressly contemplated by CD Paragraphs 213 and 214, and GE is required to cooperate and participate in such community relations efforts. CD ¶¶ 213 and 214. Thus, these costs were incurred "pursuant to the Consent Decree" and are not otherwise included in any of the capped cost categories. CD ¶ 4 (definition of Future Response Cost). The CCC meetings covered a variety of topics and, among other things, issues related to the RCMS or oversight of removal actions outside of the River. Therefore, EPA recommends allocating 20% ($5,520) of the CCC costs to the Oversight Cost

[9]Also, it is clear that these outreach costs are not Future Rest of River Capped Response Costs. The costs did not involve studying or investigating the River or "field work" to support the preparation of the Rest of River Remedial Action.

category. The remainder of the CCC costs are Future Response Costs in that they were community relations costs incurred pursuant to the CD (see CD ¶¶ 213 and 214) and were either costs related to remedy preparation or were "costs Incurred to develop plans or reports pursuant to the provisions of this Consent Decree that do not fall within the categories of costs excluded from U.S. Future Response Costs by the last sentence of this definition." CD ¶ 4. Accordingly, EPA is seeking to recover $22,080 for this cost category.

Fact Sheet Costs: $17,100

These costs relate to two fact sheets: One regarding the RCMS and the other regarding PCBs. As the bulk of these costs related to a fact sheet regarding the RCMS, EPA recommends allocating 75% ($12,825) of these costs to Oversight Costs. As for the PCB Fact Sheet, EPA prepared the document in connection with its community relations efforts to prepare the remedy. To prepare a remedy and obtain public input, EPA must educate the public. These costs were incurred pursuant to the CD, as Paragraph 213 of the CD and the definition of Future Response Costs contemplate community relations efforts. The cost of the PCB Fact Sheet is not a Future Rest of River Capped Response Cost. Accordingly, EPA is seeking to recover $4,275 for this cost category.

Supplemental Modeling Costs: $120,000

The Supplemental Modeling costs relate to EPA's development of a Geographical Information System ("GIS") that EPA used to evaluate various floodplain remedial options. These costs also relate to an update of data regarding boundary conditions for modeling of Housatonic River cleanup scenarios. Such costs could be considered Oversight Costs as they relate to "shadow or supplemental studies for the studies to be conducted by [GE]" under the RCRA Permit. CD ¶ 4 (definition of U.S. Oversight Costs). Therefore, EPA recommends moving 100% of these costs from the U.S. Future Response Costs category and into the Oversight Cost category. Accordingly, EPA is seeking to recover $0 for this cost category.

ASRC (Records Management) Costs: $67,200[10]

EPA Region 1 has contracted with ASRC Management Services, Inc. ("ASRC") to perform records management activities at EPA's hazardous waste cleanup sites regionally, including the GE-Pittsfield/Housatonic River Site. ASRC's work involves tasks such as placing documents in the official site file, assigning identification numbers to documents, indexing documents, scanning paper documents or entering electronic documents into a database, and retrieving documents upon request. ASRC incurred costs for filing and records information management related to the Site. The definition of Future Response Costs includes costs "Incurred to enforce the Consent Decree" that are not included in other enumerated cost categories. Proper records management is essential

[10] Note that this $67,200 amount does not include any costs associated with the administrative record for the Rest of River. Such costs were billed pursuant to a separate task order, and these costs were properly allocated to Decree Paragraph 96.

for EPA to enforce the Consent Decree. Because some of these ASRC costs could be related to other cost categories, EPA recommends allocating 35% ($23,520) of the ASRC costs to the cross-cutting cost pool. Accordingly, EPA is seeking to recover $43,680 for this cost category.

Repository Support/Air Monitoring/Finance/Attorney Kilborn/Agency for Toxic Substances and Disease Registry Costs: $42,300

GE appears not to have disputed these costs. See GE Statement, pgs. 3 and 4. Note that GE's total for these costs is only $37,210.37. EPA's total is $42,300. The discrepancy between these two amounts is not clear. EPA's recommendation below assumes that GE is not disputing $42,300 related to these cost categories. Accordingly, EPA is seeking to recover $42,300 for these cost categories.

Legal – Excluding Attorneys Conway and Kilborn: $9,500

These costs were incurred by EPA lawyers other than Tim Conway and John Kilborn for review and preparation of EPA's proposed remedy. As such they clearly fall into the Future Response Cost category. Accordingly, EPA is seeking to recover $9,500 for this cost category.

Legal – RCMS: $1,600

As these costs related to the review of the RCMS, EPA recommends moving 100% of these costs into the U.S. Oversight Cost category. Accordingly, EPA is seeking to recover $0 for this cost category.

Attorney Conway – Legal Labor and Travel: $84,000

Mr. Conway is an EPA Region 1 attorney who works primarily on the Site. The costs in this cost category relate to time spent and travel costs incurred by Mr. Conway that he allocated to the Future Response Costs category. Among the activities performed by Mr. Conway in FY 2011 were legal work related to land use restrictions, Decree enforcement discussions, and remedy preparation.

EPA undertook a fair and considered allocation of Mr. Conway's time. When EPA billed GE, EPA did not bill GE for $23,266 of Mr. Conway's time, which was allocated to Oversight Costs, and $321, which was billed to 1.5 Mile Reach Removal Action Costs. (That is, the $84,000 amount does not include these two amounts of $23,266 and $321.)

The Future Response Costs definition includes costs EPA incurs to enforce the CD, to obtain land use restrictions, and for preparing a remedy. That being the case, the $84,000 in costs fits squarely in that category. Accordingly, EPA is seeking to recover $84,000 for this cost category.

Mr. Tagliaferro – Technical Labor: $58,200

Mr. Tagliaferro is an engineer and EPA's overall technical project manager for the Site, working exclusively on the Site. The costs in this cost category relate to time that Mr. Tagliaferro spent on land use restrictions, a CD modification, cost bill discussions, CCC meetings, and remedy preparation.

EPA undertook a fair and considered allocation of Mr. Tagliaferro's time. When EPA billed GE, EPA did not bill GE for $91,004 of Mr. Tagliaferro's time, which was allocated to Oversight Costs, and $29,837, which was billed to 1 ½ Mile Reach Removal Action Costs.[11] (That is, the $58,200 amount does not include these two amounts of $91,004 and $29,837.)

The Future Response Cost definition includes costs EPA incurs to enforce the CD, to obtain land use restrictions, and for preparing a remedy. In addition to Mr. Tagliaferro's time that EPA has not already allocated to other cost categories, Mr. Tagliaferro spent a small amount of time reviewing the RCMS, in addition to the time he already charged to the Oversight Cost category for his review of the RCMS. Therefore, EPA recommends moving 8% ($4,656) of the $58,200 into the Oversight Cost category, in addition to the time Mr. Tagliaferro has already charged to the Oversight Cost category. Accordingly, EPA is seeking to recover $53,544 for this cost category.

Cross-Cutting Costs: $186,400

Based upon the reallocations discussed above, EPA has recalculated the amount of "cross-cutting" costs allocated to Paragraph 95. Cross-cutting costs consist of a pool of costs allocated among several cost categories as they support tasks included in more than one cost category. An example of a cross-cutting cost is the cost of EPA's field office in Pittsfield. See CD ¶ 100.f. This recalculation of the cross-cutting costs reduces GE's bill by $79,561, in addition to the reallocations recommended above. Accordingly, EPA is seeking to recover $106,839 in cross-cutting costs for this cost category.

Summary of Recommended Cost Reallocations

The following is a table showing the recommended adjustments to EPA's cost bill discussed above. To resolve this dispute, EPA recommends reducing GE's FY 2011 cost bill by $393,192. This recommended reallocation is based on the recognition that a small portion of time was spent on tasks that fall into the categories of Oversight or cross-

[11] The 1 ½ Mile Reach Removal Action was another cleanup action undertaken under the Consent Decree, which has a cost category associated with it, namely the U.S. 1 ½ Mile Reach Removal Action Costs. The physical PCB excavation in this action took place between 2002 and 2006, and activities in FY 2011 included Post-Removal Site Control activities, and oversight of periodic monitoring of the action's effectiveness.

cutting costs. Accordingly, the recommended total amount that GE owes for Future Response Costs, excluding interest, is $1,239,108.

Table 1 – Summary of Recommended Recovery Amounts From GE

Item	Current Amount in Future Costs	Percent of Recommended Reallocation to Capped Cost Categories	Recommended Reallocated Amount	Total Recommended Amount to be Recovered from GE
DOJ	$87,000	0%	$0	$87,000
NRRB/CSTAG	$407,700	10%	$40,770 to P98	$366,930
Workshops and Charrette	$523,700	20%	$104,740 to 98	$418,960
CCC/SRA DO#3	$27,600	20%	$5,520 to P98	$22,080
Fact Sheets	$17,100	75%	$12,825 to P98	$4,275
Supplemental Modeling	$120,000	100%	$120,000 to P98	$0
ASRC	$67,200	35%	$23,520 to Cross-Cutting	$43,680
Repository Support	$2,800	0%	$0	$2,800
Air Monitoring	$26,300	0%	$0	$26,300
Finance	$8,100	0%	$0	$8,100
ERE/CD Kilborn	$4,200	0%	$0	$4,200
ATSDR	$900	0%	$0	$900
Legal-excluding Conway & Kilborn	$9,500	0%	$0	$9,500
Legal--CMS	$1,600	100%	$1,600 to P98	$0
Conway	$84,000	0%	$0	$84,000
Tagliaferro	$58,200	8%	$4,656 to P98	$53,544
Cross-cutting	$186,400	n/a	$79,561	$106,839
Total	**$1,632,300**		**($393,192)**	**$ 1,239,108**

III. EPA'S RESPONSE TO GE'S ARGUMENT THAT EPA'S COSTS WERE INCURRED OUTSIDE THE PRESCRIBED PROCESS

III.A Summary of GE's Arguments Related to Costs Being Incurred Outside the Prescribed Process

In addition to the arguments above, GE asserts that to the extent that EPA actually incurred costs to develop a remedy, such costs were incurred outside the prescribed process set forth in the CD and RCRA Permit because they were incurred prior to EPA's action on the RCMS. As such, GE argues, they were not incurred "pursuant to the provisions" of the CD, as is required by the Future Response Cost definition. Further, GE asserts that charging GE for remedy development costs prior to acting on the RCMS conflicts with GE's right to administrative review of EPA's decision on the RCMS and violates GE's rights as a matter of due process.

III.B EPA Response to GE's Argument

1. The Consent Decree and RCRA Permit do not require that EPA complete the RCMS review process prior to commencing EPA's preparation of a preferred remedy.

GE is impermissibly reading into the Decree an after-the-fact, unbargained-for limitation. Neither the terms of the CD nor the Permit prohibit EPA from initiating or preparing a proposed remedy prior to acting on the RCMS and billing GE for such costs. Decree Paragraph 22.n only says EPA will propose a remedy to the public upon satisfactory completion of the RCMS. Nowhere does Paragraph 22.n prohibit EPA from initiating its preparations or preparing for proposing and selecting a remedy until EPA acts on the RCMS. The same applies to the RCRA Permit. Indeed, GE points to no specific violation of any process required by the Decree during FY11 because there was none.

Further, the CD's definition of Future Response Costs contains no restriction, either express or implied, that such costs are only recoverable if they are incurred after EPA formally acts on the RCMS. In stark contrast, some of the other cost definitions contain detailed language that limits costs by citing dates and deadlines. For example, the definition of Future Rest of River Capped Response Costs provides that such costs must be incurred after March 31, 1999 but before selection of the Rest of River Remedial Action, and the definition of Oversight Costs contains similar explicit limitations. The definition of Future Response Costs does not provide that EPA must act on the RCMS before it can incur costs under the Paragraph. GE cannot now insert favorable *post hoc* limitations into the definition of Future Response Costs.

2. Preparing a proposed remedy prior to a final decision on the RCMS is consistent with RCRA and Superfund guidance and is the logical and efficient method for EPA to select a remedy.

Contrary to what GE asserts, RCRA Corrective Action ("CA") guidance, CERCLA guidance, and the Superfund's National Contingency Plan ("NCP") give EPA flexibility

to begin preparation of a proposed remedy prior to completion of a corrective measures study, under RCRA, or a feasibility study, under Superfund. RCRA guidance on CA expressly emphasizes that RCRA remedy selection is results-oriented, flexible, and not a lock-step process. Corrective action should "not be viewed as isolated steps in a linear process." 61 F.R. 19447 (May 1, 1996). In some situations, the EPA may not even require submission or approval of a corrective measures study. Id. and at 19455. The elements of RCRA CA are not "ends in themselves" and are "not prescribed steps along a path." Id. at 19443. Further, RCRA guidance states that the earlier that potential remedies can be identified "the more effectively information gathering can be focused." Id. at 19447. This guidance gives ample support for the Region's decision to begin remedy preparation prior to acting on the RCMS.

CERCLA guidance provides similar flexibility. In describing proposed plans, the NCP expressly states: "The selection of remedy process for an operable unit may be initiated at any time during the remedial action process." 40 CFR § 300.430(f)(2). The NCP preamble also states that "flexibility is needed in the remedy selection process" because each site "presents a different set of circumstances." 55 FR 8724 (March 8, 1990). EPA guidance on proposed plans emphasizes flexibility and early identification of the preferred remedy. See Page 2-1, *A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents* (July 1999). For example, this Guidance expressly states "in some circumstances, a draft [proposed plan] "can be developed as the RI/FS is being finalized." Id. This guidance shows clearly that remedy selection can begin before remedy evaluation is absolutely final.

Given the flexibility that the above-cited guidance encourages, it is logical and efficient for EPA to review the RCMS and begin preparing a proposed remedy prior to formally responding to GE on the RCMS. Preparing a proposed remedy, including obtaining input from the RRB, the CSTAG, and the public, has informed EPA's analysis of the RCMS, especially given the complexity of the river, the numerous cleanup alternatives, and the multitude of interests at stake. Obtaining public input early in the remedy selection process will help ensure that EPA's formal response to the RCMS will reflect that input and be consistent with EPA's preliminary position on a proposed remedy.

EPA will also save time by a concurrent, instead of a sequential, remedy selection process. By contrast, if EPA had responded to the RCMS prior to initiating work on the remedy proposal, any comments received from the public, from the RRB or CSTAG reviewers, or from discussions between EPA and the States of Massachusetts and Connecticut, would likely have necessitated additional responses to the RCMS, which would be an inefficient mechanism for EPA and for GE. Clearly, such a process was not intended. In short, EPA's remedy selection process is logical, efficient, and will save time and resources.

It is well within EPA's administrative expertise to determine what is the best and most efficient process for selecting the remedy.[12] The Consent Decree anticipates that EPA

[12] EPA's administrative expertise is afforded judicial deference under an arbitrary and capricious standard. See standard of judicial review above at I.D.

will select a remedy based upon the law, regulations, and its policies and practice, related to RCRA and Superfund remedy selection.[13] Given the complexities of this Site and remedy selection, the Decree contemplates that there could be overlap between EPA's RCMS decision and EPA's remedy selection prior to the final modification of the Permit. For example, the RCRA Permit contemplates that the RCMS may need to be revised based upon public comment on EPA's proposed remedy. RCRA Permit, § II.J. In sum, EPA's remedy selection is authorized by guidance, efficient and cost effective, and well within the bounds of the Consent Decree.

3. GE has no due process right to an administrative hearing prior to EPA incurring costs related to remedy selection, and if it did have a due process right, that right is satisfied by the current dispute resolution proceedings over the FY 2011 costs.

GE argues that EPA's commencement of work on a proposed remedy "renders meaningless" GE's right to dispute resolution on the RCMS. But EPA's actions have in no way foreclosed GE's right to dispute resolution after EPA releases its decision on the RCMS. If GE invokes dispute resolution at that time, GE will have the dispute resolution process provided pursuant to the Decree and RCRA Permit, and EPA will consider GE's arguments and act on them, if warranted. Further, contrary to GE's allegations that EPA is developing its remedy outside of the RCMS process, EPA has considered the RCMS in detail in preparing to propose its remedy. As discussed above, EPA began its decision-making process to prepare a proposed remedy after EPA reviewed the RCMS and after receiving public comment on the RCMS.

In short, EPA has been following and will continue to follow the prescribed process set forth in the CD and RCRA Permit. GE cannot claim a due process violation because EPA is billing GE properly according to the agreed-upon provisions of the Decree. A due process violation requires a property interest that is violated. GE has no such property interest when EPA is billing GE according to the CD definitions that GE agreed to. See *Board of Regents v. Roth*, 408 U.S. 564, 578 (1972) (non-tenured professor had no property interest and no process due where the terms of his appointment did not require re-employment); *Unger v. National Residents Matching Program*, 928 F.2d 1392, 1402 (3rd. Cir. 1991) (concurring opinion, there is no due process deprivation unless there is a breach of contract); *Spalt v. United States*, 2002 U.S. Dist. LEXIS 12381, *8 (D. Mass. 2002) (fisherman had no protected property interest in renewal of fishing permits pursuant to the terms of a settlement agreement). Also, the RCRA and Superfund remedy selection guidance cited above gave GE pre-Decree notice of the flexibility inherent in RCRA and Superfund remedy selection. Thus, GE cannot claim a due process violation where the Decree requires GE to reimburse EPA for Future Response Costs, including for EPA's remedy selection and preparation costs regardless of whether such costs are incurred before EPA's decision on the RCMS, and where EPA guidance allows and gave GE notice of such flexibility.

[13] For example, the RCRA permit requires that an evaluation of remedial alternatives occur according to RCRA's general standards for corrective measures. RCRA Permit, § II.G. Such evaluation must also consider whether the alternatives can comply with applicable or relevant and appropriate environmental requirements, which is a Superfund requirement. Id.

Accordingly, the Decree's procedures do not give rise to a constitutional requirement for due process. Even if they did, that requirement is satisfied by the "hearings" afforded to GE in form of these current dispute resolution proceedings concerning the FY 2011 costs. *See In re General Electric*, RCRA Appeal No. 91-7, 4. E.A.D. 615 (E.P.A.), 1993 WL 130294 (April 13, 1994) at 17. GE will have an opportunity for dispute resolution again in FY 2012, and every year thereafter that EPA seeks reimbursement of its costs. GE will also have an additional opportunity for dispute resolution when EPA formally acts on the RCMS. GE will also have several opportunities for additional process, including judicial review, regarding EPA's proposed permit modification.

Conclusion

For the reasons stated above, EPA disagrees with GE's July 2, 2012 Statement of Position. To resolve this dispute, however, EPA recommends reducing GE's FY 2011 Cost Bill by $393,192. The recommended reallocation is based on the recognition that a small portion of time was spent on tasks that fall into the categories of Oversight or cross-cutting costs. Accordingly, the recommended total amount GE owes for Future Response Costs, excluding interest, is $1,239,108.

List of Exhibits:

1. Section XXIV of the CD titled "Dispute Resolution."
2. Table Showing Cost Categories.
3. March 2011 Presentation to the CCC.
4. Excerpt from the EPA Mini-Workshop Website.
5. Fact Sheets issued in April 2011.
6. Letters from the Regional Administrator for the Mini-Workshops and the Charrette.

131. If Settling Defendant elects to invoke the dispute resolution procedures set forth in Section XXIV (Dispute Resolution), it shall do so no later than 15 days after receipt of EPA's notice. In any such proceeding, Settling Defendant shall have the burden of demonstrating by a preponderance of the evidence that the delay or anticipated delay has been or will be caused by a force majeure event, that the duration of the delay or the extension sought was or will be warranted under the circumstances, that best efforts were exercised to avoid and mitigate the effects of the delay, and that Settling Defendant complied with the requirements of Paragraphs 128 and 129 above. If Settling Defendant carries this burden, the delay at issue shall be deemed not to be a violation by Settling Defendant of the affected obligation of this Consent Decree identified to EPA and the Court.

XXIV. DISPUTE RESOLUTION

132. Unless otherwise expressly provided for in this Consent Decree, the dispute resolution procedures of this Section shall be the exclusive mechanism to resolve disputes between EPA and Settling Defendant, between the Trustees and Settling Defendant, between Connecticut and Settling Defendant, between the State and Settling Defendant, between the Trustees and PEDA, between EPA and PEDA, between EPA and the City, or between the State and PEDA and/or the City arising under or with respect to this Consent Decree. The procedure for resolution of disputes which involve EPA are governed by Paragraphs 133-139 and 141. The State may participate in such dispute resolution proceedings to the extent specified in those Paragraphs. Disputes exclusively between the State and Settling Defendant are governed by Paragraph 140. Disputes exclusively between the Trustees and Settling Defendant are governed by

Paragraph 142. Disputes exclusively between Connecticut and Settling Defendant are governed by Paragraph 143. Disputes between the Trustees and PEDA are governed by Paragraph 144. Disputes between EPA and PEDA are governed by Paragraph 145.a. Disputes between EPA and the City are governed by Paragraph 145.b. Disputes between the State and PEDA and/or the City are governed by Paragraphs 145.c and 145.d. However, the procedures set forth in this Section shall not apply to actions by the United States, the Trustees, Connecticut or the State to enforce obligations of Settling Defendant that have not been disputed in accordance with this Section.

133. Any dispute which arises under or with respect to this Consent Decree shall in the first instance be the subject of informal negotiations between the parties to the dispute. The period for informal negotiations shall not exceed 20 days from the time the dispute arises, unless it is modified by written agreement of the parties to the dispute. The dispute shall be considered to have arisen when one party sends the other parties a written Notice of Dispute.

134. Mediation

a. Initiation of ADR. At any time during the informal dispute resolution period, any party to the dispute may propose the use of a mediator to assist in resolving the dispute. Upon the written agreement of the parties to the dispute, the period for informal dispute resolution may be extended for the purpose of mediating the dispute. Formal dispute resolution, as governed by the procedures set forth in Paragraphs 135 to 137, shall commence immediately upon the termination of the informal dispute resolution period.

b. Decision to Continue ADR. The decision to continue mediation shall be in the sole discretion of each party.

c. Costs of ADR. The parties agree that they will share equitably the costs of mediation, subject to the availability of United States, Connecticut or State funds for this purpose. The ability of the United States, Connecticut and the State to share the costs of mediation will be determined by each agency in its sole discretion and shall not be subject to dispute resolution or judicial review. If an agency determines that no mediation funding is available, Settling Defendant shall have the option to cover all of the mediation costs or to request the services of a trained mediator from EPA's in-house ADR program or any other dispute resolution professional whose services may be available to the parties at no cost or to withdraw from or not pursue mediation.

d. Mediator List. The Parties agree that they shall, after this Consent Decree is lodged, prepare a list of mediators agreeable to the Parties from which a mediator may be selected. This list shall not preclude any Party from proposing to add a mediator or mediators to the list or from proposing a different mediator for a specific dispute.

e. Confidentiality. The Parties agree that participants in mediated discussions pursuant to this Section shall execute a confidentiality agreement in the form attached as Appendix S to this Consent Decree.

135. a. In the event that the Parties cannot resolve a dispute by informal negotiations or mediation under the preceding Paragraphs of this Section, then the position advanced by EPA, after reasonable opportunity for review and comment by the State, shall be considered binding unless, within 14 days after the conclusion of the informal negotiation period, Settling Defendant invokes the formal dispute resolution

procedures of this Section by serving on the United States and the State a written Statement of Position on the matter in dispute, including, but not limited to, any factual data, analysis or opinion supporting that position and any supporting documentation relied upon by the Settling Defendant. Settling Defendant may request EPA to grant an extension of this 14-day period to serve its Statement of Position. If such request is for an additional seven days or less, EPA shall not unreasonably withhold approval of such request. The granting of any request for a longer extension of time to file the Statement of Position shall be within EPA's discretion. Settling Defendant's Statement of Position shall specify Settling Defendant's position as to whether formal dispute resolution should proceed under Paragraph 136 or Paragraph 137.

b. Following receipt of Settling Defendant's Statement of Position, within 14 days or such longer time period as Settling Defendant received for submittal of its Statement of Position under Paragraph 135.a on the same dispute, EPA, after reasonable opportunity for review and comment by the State, will serve on Settling Defendant its Statement of Position, including, but not limited to, any factual data, analysis, or opinion supporting that position and all supporting documentation relied upon by EPA. EPA's Statement of Position shall include a statement as to whether formal dispute resolution should proceed under Paragraph 136 or 137. Within 14 days after receipt of EPA's Statement of Position, Settling Defendant may submit a Reply.

c. If there is disagreement between EPA and Settling Defendant as to whether dispute resolution should proceed under Paragraph 136 or 137, the parties to the dispute shall follow the procedures set forth in the paragraph determined by EPA to be applicable. However, if Settling Defendant ultimately appeals to the Court to resolve the

dispute, the Court shall determine which paragraph is applicable in accordance with the standards of applicability set forth in Paragraphs 136 and 137.

136. Except as otherwise provided in Paragraph 123.a, formal dispute resolution for disputes pertaining to the selection or adequacy of any response action and all other disputes that are accorded review on the administrative record under applicable principles of administrative law shall be conducted pursuant to the procedures set forth in this Paragraph. For purposes of this Paragraph, the adequacy of any response action includes, without limitation: (1) the adequacy or appropriateness of plans, procedures to implement plans, or any other items requiring approval by EPA under this Consent Decree; and (2) the adequacy of the performance of response actions taken pursuant to this Consent Decree.

a. An administrative record of the dispute shall be maintained by EPA and shall contain all statements of position, including supporting documentation, submitted pursuant to this Section. Where appropriate, EPA may allow submission of supplemental statements of position by the parties to the dispute.

b. The Director of the Office of Site Remediation and Restoration, EPA Region I (or other appropriate official in Region I, at the level of Director or Deputy Director of an Office, as designated by the Regional Administrator), will issue, after reasonable opportunity for review and comment by the State, a final administrative decision resolving the dispute based on the administrative record described in Paragraph 136.a. This decision shall be binding upon the Settling Defendant, subject only to the right to seek judicial review pursuant to Paragraph 136.c. and d.

c. Any administrative decision made by EPA pursuant to Paragraph 136.b shall be reviewable by this Court, provided that a motion for judicial review of the decision is filed by Settling Defendant with the Court and served on all Parties within 21 days of receipt of EPA's decision. The motion shall include a description of the matter in dispute, the efforts made by the parties to resolve it, the relief requested, and the schedule, if any, within which the dispute must be resolved to ensure orderly implementation of this Consent Decree. The United States may file a response to Settling Defendant's motion within thirty days after receipt of such motion. Settling Defendant may file a reply to the United States' response within 10 days of receipt of such response. All deadlines set forth in this subparagraph for filings with the Court may be extended by stipulation of Settling Defendant and the United States or by the Court for good cause shown.

d. In proceedings on any dispute governed by this Paragraph, Settling Defendant shall have the burden of demonstrating that the decision of the Office of Site Remediation and Restoration Director (or other designated official in Region I, as specified in Paragraph 136.b) is arbitrary and capricious or otherwise not in accordance with law. Judicial review of EPA's decision shall be on the administrative record compiled pursuant to Paragraph 136.a.

137. Formal dispute resolution for disputes that neither pertain to the selection or adequacy of any response action nor are otherwise accorded review on the administrative record under applicable principles of administrative law, shall be governed by this Paragraph.

a. Following receipt of Settling Defendant's Statement of Position submitted pursuant to Paragraph 135.a, the Director of the Office of Site Remediation and

Restoration, EPA Region I (or other appropriate official in Region I, at the level of Director or Deputy Director of an office, as designated by the Regional Administrator), after reasonable opportunity for review and comment by the State, will issue a final decision resolving the dispute. This decision shall be binding on Settling Defendant unless, within 21 days of receipt of the decision, Settling Defendant files with the Court and serves on the parties a motion for judicial review of the decision setting forth the matter in dispute, the efforts made by the parties to resolve it, the relief requested, and the schedule, if any, within which the dispute must be resolved to ensure orderly implementation of the Consent Decree. The United States may file a response to Settling Defendant's motion within thirty days after receipt of such motion. Settling Defendant may file a reply to the United States' response within 10 days of receipt of such response. All deadlines set forth in this subparagraph for filings with the Court may be extended by stipulation of Settling Defendant and the United States or by the Court for good cause shown.

b. Notwithstanding Paragraph R of Section I (Background) of this Consent Decree, judicial review of any dispute governed by this Paragraph shall be governed by applicable principles of law.

138. Nothing in this Consent Decree shall be construed to allow Settling Defendant to seek dispute resolution under this Section XXIV regarding:

a. EPA's Action Memorandum regarding the Upper 2-Mile Reach or EPA's Action Memorandum for the Removal Actions Outside the River; provided, however, that nothing in this subparagraph shall preclude Settling Defendant from raising any issue with respect to the underlying assumptions or other bases set forth in those memoranda in connection with: (i) a challenge to EPA's selection of the Rest of the River Remedial

Action pursuant to Paragraphs 22 and 141.b of this Consent Decree; (ii) dispute resolution regarding a determination by EPA, the State, or Connecticut that the criteria described in Paragraphs 162, 163, 167, 168, 171 and/or 172 (Pre- and Post-Certification Reservations) of this Consent Decree have been satisfied; or (iii) dispute resolution relating to the establishment of spatial averaging areas or the evaluation of non-PCB Appendix IX+3 constituents in accordance with the SOW;

b. the Action Memorandum to be issued by EPA regarding the 1 ½ Mile Reach upon completion of the EE/CA and EPA's selection of the 1 ½ Mile Reach Removal Action in accordance with Paragraph 21 of this Consent Decree; provided, however, that nothing in this subparagraph shall preclude Settling Defendant from: (i) submitting a position paper to the National Remedy Review Board regarding EPA's EE/CA for the 1 ½ Mile Reach as provided in Paragraph 21.a(iii) of this Consent Decree; or (ii) raising any issue with respect to the underlying assumptions or other bases set forth in the above-described Action Memorandum or other selection documents for the 1 ½ Mile Reach Removal Action in connection with a challenge to EPA's selection of the Rest of the River Remedial Action pursuant to Paragraphs 22 and 141.b of this Consent Decree or in connection with dispute resolution regarding a determination by EPA, the State, or Connecticut that the criteria described in Paragraphs 162, 163, 167, 168, 171 and/or 172 (Pre- and Post-Certification Reservations) of this Consent Decree have been satisfied; and/or

c. the modification of the Reissued RCRA Permit to select the Rest of the River Remedial Action in accordance with Paragraph 22, except as provided in the Reissued RCRA Permit and Paragraphs 22 and 141.b of this Consent Decree.

139. The invocation of formal dispute resolution procedures under this Section shall not extend, postpone or affect in any way any obligation of Settling Defendant under this Consent Decree, not directly in dispute, unless EPA, after reasonable opportunity for review and comment by the State, or the Court agrees otherwise. Stipulated penalties with respect to the disputed matter shall continue to accrue but payment shall be stayed pending resolution of the dispute as provided in Paragraph 157. Notwithstanding the stay of payment, stipulated penalties shall accrue from the first day of noncompliance with any applicable provision of this Consent Decree, and shall continue to accrue in accordance with the provisions of Paragraph 153. In the event that Settling Defendant does not prevail on the disputed issue, stipulated penalties shall be assessed and paid as provided in Section XXV (Stipulated Penalties).

140. Disputes Solely between the State and Settling Defendant. Disputes arising under or with respect to this Consent Decree solely between the State and Settling Defendant that relate to Massachusetts Past Response Costs, Massachusetts Future Response Costs, Massachusetts Interim Response Costs, Massachusetts Oversight Costs, assessment of stipulated penalties by the State, Massachusetts Pre-Certification and Post-Certification Reservations, access to information by the State, the State's right of access to Settling Defendant Property, the State's consent to subordination agreements for EREs as provided in Paragraphs 54.c and 57.d, access to State-owned property (as provided in Paragraph 62), emergency response actions taken by the State pursuant to Section XIX (Emergency Response), and/or notifications to the State pursuant to Paragraph 208 shall be governed in the following manner. The procedures for resolving the disputes mentioned in this Paragraph shall be the same as provided for

in Paragraphs 133 to 139 of this Section, except that each reference to EPA shall read as a reference to MADEP, each reference to the Director of the Office of Site Remediation and Restoration, EPA Region I, shall be read as a reference to the MADEP Assistant Commissioner for the Bureau of Waste Site Cleanup, each reference to the United States shall be read as a reference to the State, and each reference to the State shall be read as a reference to EPA. Dispute resolution under this Paragraph concerning stipulated penalties that relate to Massachusetts Past Response Costs, Massachusetts Future Response Costs, Massachusetts Interim Response Costs, or Massachusetts Oversight Costs shall be limited to whether MADEP has properly assessed and/or calculated such stipulated penalties. The resolution of disputes between the Commonwealth and Settling Defendant that relate to the amount of those Massachusetts Future Response Costs which are subject to Paragraph 95.d(iv), Massachusetts Interim Response Costs or Massachusetts Oversight Costs owed to the Commonwealth shall proceed in accordance with the provisions of 310 C.M.R. 40.1220(3).

141. Dispute Resolution Relating to the Rest of the River: Disputes between Settling Defendant and EPA relating to the Rest of the River shall be subject to the following dispute resolution procedures:

a. For disputes relating to EPA's conditional approval, disapproval, or modification of deliverables submitted by Settling Defendant to EPA under the Reissued RCRA Permit, or regarding other issues arising under the Reissued RCRA Permit, prior to EPA's issuance of the permit modification selecting a Remedial Action for the Rest of the River, as referenced in Paragraph 22.p of this Consent Decree, such disputes shall be resolved in accordance with the Dispute Resolution provisions in Special Condition

II.N of the Reissued RCRA Permit. Settling Defendant shall not contend that EPA's conditional approval, disapproval, or modification of any such submissions or other action taken by EPA under the Reissued RCRA Permit (except for a permit modification pursuant to General Condition I.C. of the Reissued RCRA Permit) prior to EPA's issuance of the permit modification selecting a Remedial Action for the Rest of the River constitutes a modification of the Reissued RCRA Permit for purposes of invoking 40 C.F.R. Parts 124 and 270 or Section 7006(b) of RCRA.

b. For disputes relating to EPA's modification of the Reissued RCRA Permit to select the Rest of the River Remedial Action, as referenced in Paragraphs 22.o, 22.p, 22.t and/or 22.v of this Consent Decree, the dispute resolution procedures shall be as follows:

(i) Upon receipt of EPA's notification of its intended permit modification decision, as provided in Paragraph 22.o of this Consent Decree, Settling Defendant shall have the right, within 30 days of such notification, to seek administrative dispute resolution within EPA Region I. Such dispute resolution shall include both informal and formal administrative dispute resolution processes in accordance with the administrative dispute resolution provisions of Paragraphs 133-136 of this Consent Decree; provided, however, that Settling Defendant shall not have the right to seek judicial review of the administrative decision on EPA's notification of its intended permit modification pursuant to this subparagraph.

(ii) Upon receipt of EPA's permit modification decision, as provided in Paragraph 22.p of this Consent Decree, Settling Defendant shall have the

right to seek review of that permit modification decision in the EPA Environmental Appeals Board within 30 days pursuant to 40 C.F.R. § 124.19.

(iii) After issuance of a decision by the Environmental Appeals Board, Settling Defendant shall have the right to seek review of that decision in the United States Court of Appeals for the First Circuit pursuant to Section 7006(b) of RCRA.

(iv) In the event that the Environmental Appeals Board or the United States Court of Appeals vacates or remands all or part of EPA's permit modification decision and EPA revises and reissues that decision, as provided in Paragraph 22.t of this Consent Decree, Settling Defendant shall have the right to seek review of that revised permit modification decision in the Environmental Appeals Board pursuant to 40 C.F.R. § 124.19 (except as otherwise approved or determined by the United States Court of Appeals) and thereafter in the United States Court of Appeals for the First Circuit, pursuant to Section 7006(b) of RCRA, as provided in Paragraph 22.u. The rights and procedures applicable to subsequent EPA permit modification decisions shall be as provided in Paragraph 22.v.

(v) Any proceedings in the EPA Environmental Appeals Board and the United States Court of Appeals for the First Circuit shall be governed by applicable law and the rules of such Board and Court; provided, however, that the United States and Settling Defendant shall jointly move the Court of Appeals for expedited briefing and consideration as provided in Paragraphs 22.q, 22.u(iv), and 22.v(ii) (as applicable) of this Consent Decree, and provided further that the effectiveness of the initial or a revised permit modification shall be stayed pending review to the extent provided in Paragraphs 22.q, 22.u(iv), and 22.v(ii), as applicable.

(vi) In any administrative or judicial challenge to EPA's initial or revised permit modification decision, Settling Defendant shall not contend that EPA's conditional approval, disapproval, or modification of a deliverable submitted by Settling Defendant under the Reissued RCRA Permit or other action taken by EPA under the Reissued RCRA Permit (except for a permit modification pursuant to General Condition I.C. of the Reissued RCRA Permit) prior to EPA's initial permit modification decision setting forth the selected Remedial Action for the Rest of the River constituted a modification of the Permit. However, Settling Defendant shall not be precluded from challenging EPA's decisions on such prior submissions or other such prior EPA action on any substantive grounds. All Parties reserve their rights, during such a challenge, to raise any arguments related to implementation of Work in the Upper 2-Mile Reach of the River.

c. For any disputes which arise after a final determination has been made on the selection of the Rest of the River Remedial Action and which relate to the Rest of the River, such disputes shall be resolved under the Dispute Resolution provisions of Paragraphs 133 through 139 of this Consent Decree.

142. Disputes Between the Trustees and Settling Defendant. Disputes arising under this Consent Decree between the Trustees and Settling Defendant that relate to Settling Defendant's obligations under Section XXI (Natural Resource Damages) of this Consent Decree, costs Incurred by or required to be paid to the Trustees, and/or assessment of liquidated damages by the Trustees shall be governed in the following manner. The procedures for resolving the disputes mentioned in this Paragraph shall be the same as provided for in Paragraphs 133-139 of this Section, except that each

reference to EPA shall read as a reference to the Trustees, and each reference to the Director of the Office of Site Remediation and Restoration, EPA Region I, shall be read as a reference to the Trustee Secretaries.

143. Disputes Solely Between Connecticut and Settling Defendant. Disputes arising under or with respect to this Consent Decree solely between Connecticut and Settling Defendant that relate to Connecticut Past Response Costs, Connecticut Future Costs, Connecticut Pre-Certification and Post-Certification Reservations, assessment of stipulated penalties by Connecticut, access to information by Connecticut, and/or Connecticut's right of access to Settling Defendant Property shall be governed in the following manner. The procedures for resolving the disputes mentioned in this Paragraph shall be the same as provided for in Paragraphs 133-139 of this Section, except that each reference to EPA shall read as a reference to CTDEP, each reference to the Director of the Office of Site Remediation and Restoration, EPA Region I, shall be read as a reference to the Commissioner of CTDEP, each reference to the United States shall be read as a reference to Connecticut, and each reference to the State shall be read as a reference to EPA. Dispute resolution under this Paragraph concerning stipulated penalties that relate to Connecticut Past Response Costs or Connecticut Future Costs shall be limited to whether CTDEP has properly assessed and/or calculated such stipulated penalties.

144. Disputes Between Trustees and PEDA. Disputes arising under the Consent Decree between the Trustees and PEDA that relate to PEDA's obligations as set forth in Paragraph 124 of Section XXI (Natural Resource Damages) shall be governed in the following manner. The procedures for resolving the disputes mentioned

in this Paragraph shall be the same as provided for in Paragraphs 133-139 of this Section, except that each reference to EPA shall read as a reference to the Trustees, each reference to the Director of the Office of Site Remediation and Restoration, EPA Region I, shall be read as a reference to the Trustee Secretaries, and each reference to Settling Defendant shall be read as a reference to PEDA.

145. Disputes Between EPA and PEDA, Between EPA and the City, and Between the State and PEDA and/or the City.

a. Disputes between EPA and PEDA that relate to property that has been or will be transferred to PEDA pursuant to the Definitive Economic Development Agreement and (i) are authorized pursuant to Paragraph 46 (Settling Defendant's Obligation to Perform Further Response Actions), or (ii) arise under Paragraph 48.b, or (iii) arise under Paragraph 65 of this Consent Decree shall follow the procedures set forth in Paragraphs 133-136 (record review), except that each reference to Settling Defendant shall be read as a reference to PEDA.

b. Disputes between EPA and the City that arise under Paragraph 66 of this Consent Decree shall follow the procedures set forth in Paragraphs 133-136 (record review), except that each reference to Settling Defendant shall be read as a reference to the City.

c. Disputes solely between the State and PEDA and/or the City, respectively, under Paragraph 65 or Paragraph 66 of this Consent Decree, that arise prior to Certification of Completion of the Response Action pursuant to which said dispute arises shall follow the procedures set forth in Paragraphs 133-136 (record review), except that each reference to EPA shall be read as a reference to MADEP, each reference to

the Director of Office of Site Remediation, EPA Region I, shall be read as a reference to the MADEP Assistant Commissioner for the Bureau of Waste Site Cleanup, and each reference to Settling Defendant shall be read as a reference to PEDA or the City, as appropriate.

d. Disputes between the State and PEDA and/or the City, respectively under Paragraph 65 or Paragraph 66 of this Consent Decree, that arise after Certification of Completion of the Response Action pursuant to which said dispute arises, shall follow the procedures set forth in Paragraphs 133-136 (record review), except that each reference to EPA shall be read as a reference to MADEP, each reference to the Director of the Office of Site Remediation, EPA Region I shall be read as a reference to the MADEP Assistant Commissioner for the Bureau of Waste Site Cleanup, and each reference to Settling Defendant shall be read as a reference to PEDA or the City, as appropriate.

XXV. STIPULATED PENALTIES

146. Settling Defendant shall be liable collectively to the United States, the State and/or Connecticut for stipulated penalties or liquidated damages (for failures to comply relating to the Trustees) in the amounts set forth in Paragraphs 147-152 for failure to comply with the requirements of this Consent Decree specified below, unless excused under Section XXIII (Force Majeure); provided, however, that Settling Defendant shall not be liable for both stipulated penalties and liquidated damages for violations of the same obligation. Settling Defendant shall pay 70% of stipulated penalties to the United States and shall pay 30% of stipulated penalties to the State in accordance with Paragraph 155 of this Section. "Compliance" by Settling Defendant shall include completion of the

Subject to FRE 408 – Settlement Confidential
5/17/12

Cost, Task, and Billing Summary
For EPA's Cost Bill to GE for 10/1/10 – 9/30/11

Costs[1]	Task	GE Not Billed	EPA Billed GE
$18,280	Rest of River Capped Costs (P96). See attached summary.	$18,280	$0
$2,054,863	Oversight Costs (P98a). See attached summary.	$2,054,863	$0
DOJ $87,000	Work incurred by DOJ pursuant to Consent Decree (P95).		$87,000 (includes an additional $6,500 originally excluded from the January cost bill)
NRRB, including IA69; EPA HQ labor/travel; Regional labor/travel; and internal remedy management review: $407,700	Preparing, reviewing and approving the documents that will propose and select the Rest of River remedial action (P95).		$407,700
CSTAG $0	There are no separate CSTAG costs. The CSTAG members referenced in GE's letter attended the NRRB Meeting.	$0	$0
Situation Assessments, mini-workshops, and	As part of EPA's decision-making process for the cleanup of the Rest of River, EPA is considering		$523,700

[1] The cost figures include indirect costs.

Costs[1]	Task	GE Not Billed	EPA Billed GE
the Charrette, including IA 169; SRAC D.O. 92; and EPA labor and travel $523,700	public input on the proposal of a ROR remedial action. The purpose of the meetings was for stakeholders to learn and interact regarding the Rest of River cleanup (P95).		
SRAC D.O. 3; $27,600	Scheduling, facilitating and summarizing CCC meetings. Required by Paragraphs 213 and 214 of the Decree (P95).		$27,600
Fact Sheets, IA169 $17,100	Development of FAQs, CMS Fact Sheet and PCB Fact Sheet (P95 and 213).		$17,100
Supplemental modeling, including IA169: $120,000	Development of GIS system used to evaluate various floodplain remediation options in proposing a Rest of River remedial option (P95).		$120,000
ASRC: $67,200	Records management including for the purposes of community relations (P213) and enforcing the Decree (P95), excluding $17,182 for the ROR Admin Record.	$17,182 *(these costs are included in the $18,280 amount provided above for P95 costs not billed)*	$67,200
Repository support EPA labor -- Howell $2,800	Maintaining local repositories of all public documents provided to EPA by GE, including for the purposes of community relations (P213) and enforcing the Decree (P95).		$2,800
Air Monitoring at Allendale, IA 246: $26,300	Recoverable work based upon prior understanding with GE.		$26,300 Costs not disputed by GE

Costs[1]	Task	GE Not Billed	EPA Billed GE
Finance/accounting, EPA labor $8,100	Work pursuant to Consent Decree including preparation of cost recovery billing (P95).		$8,100 Costs not disputed by GE
EREs/CD modifications EPA labor (Kilborn) $4,200	Work related to land use restrictions and CD modifications (P95).		$4,200
ATSDR: $900		$715 *(these costs are included in the $18,280 amount provided above for P95 costs not billed)*	$900 Costs not disputed by GE
Legal EPA labor excluding Conway and Kilborn $9,500	Legal Support –Remedy Selection (P95)		$9,500
Legal EPA Labor $1,600	Legal Support-CMS review		$1,600 (Note: Needs to be moved to P98a)
Conway – Legal EPA labor & travel $84,000	Legal-land use restrictions, CD modifications, CCC meetings, cost bill discussions, and remedy selection (P95)	$23,266 (*these costs are included in the $2,054,863 amount provided above for P98 costs not billed)* *In addition,* $321 *was allocated to P103 costs*	$84,000
Tagliaferro -- Technical EPA labor $58,200	Land use restrictions, CD modifications, CCC meetings, and remedy selection (P95)	$91,004 (*these costs are included in the $2,054,863 amount provided above for P98 costs not billed)* *In addition, $29,837*	$58,200

Costs[1]	Task	GE Not Billed	EPA Billed GE
		was allocated to P103 costs	
Cross-cutting $186,400			$186,400
Total Billed GE			$1,632,300 (Excludes $60,700 credit due for 1.5 Mile Cost share.)
Total NOT Billed GE		$2,073,143	

Total costs incurred = $1,632,300 + $2,073,143 = $3,705,443

EPA has already offered to reallocate $115,500 of this bill into Oversight (P98a) or Future Rest of River Capped Costs (P96)

Thus total amount due including EPA's proposed reallocation would be: $1,516,800 (less the $60,700 credit)

And total costs not billed would be: $2,188,643

IFMS Reconciliation Pending

Itemized Cost Summary

GENERAL ELECTRIC CO., PITTSFIELD, MA SITE ID = 01 67

Paragraph 96
10/1/10 - 9/30/11

ALLOCATION TRANSFER IAG COSTS	
DEPARTMENT OF HEALTH & HUMAN SERVICES (ATSDR)	$714.84
INTERAGENCY AGREEMENT (IAG) COSTS	
ARMY CORPS OF ENGINEERS (DW96940169)	$219.79
OTHER CONTRACT COSTS	
ASRC MANAGEMENT SERVICES, INC. (EPW05052)	$12,933.72
EPA INDIRECT COSTS	$4,319.62
cross-cutting allocation 0.014%	$91.80
Total Site Costs:	$18,279.77

IFMS Reconciliation Pending

Itemized Cost Summary

GENERAL ELECTRIC CO., PITTSFIELD, MA SITE ID = 01 67

Paragraph 98a Costs
10/1/10 - 9/30/11

REGIONAL PAYROLL COSTS	$248,048.47
HEADQUARTERS PAYROLL COSTS	$2,078.98
REGIONAL TRAVEL COSTS	$10,372.30
INTERAGENCY AGREEMENT (IAG) COSTS	
ARMY CORPS OF ENGINEERS (DW96940169)	$630,199.28
ARMY CORPS OF ENGINEERS (DW96940246)	$348,451.18
EPA INDIRECT COSTS	$406,936.90
Cross-cutting allocation 62.851%	$408,776.18
Total Site Costs:	$2,054,863.29

Update on the Corrective Measures Study Process

March 2, 2011

Status

- GE submitted its Revised Corrective Measures Study (RCMS) October 10, 2010
- The RCMS provides GE's analysis of 10 sediment, 9 floodplain, and 5 disposal alternatives and its recommended cleanup plan
- Public Input Period originally scheduled to close December 15th, extended to January 31st

EPA's Evaluation of Alternatives

- EPA is evaluating the alternatives in the RCMS considering:
  - Input received from stakeholders
  - The 9 evaluation criteria specified in the RCRA Permit (listed below)
- General Standards
    - Overall protection of human health and the environment
    - Control of sources of releases
    - Compliance with ARARS
- Selection Decision Factors
    - Long-term reliability and effectiveness
    - Attainment of IMPGs (interim cleanup goals)
    - Reduction of toxicity, mobility, volume
    - Short-term effectiveness
    - Implementability
    - Cost

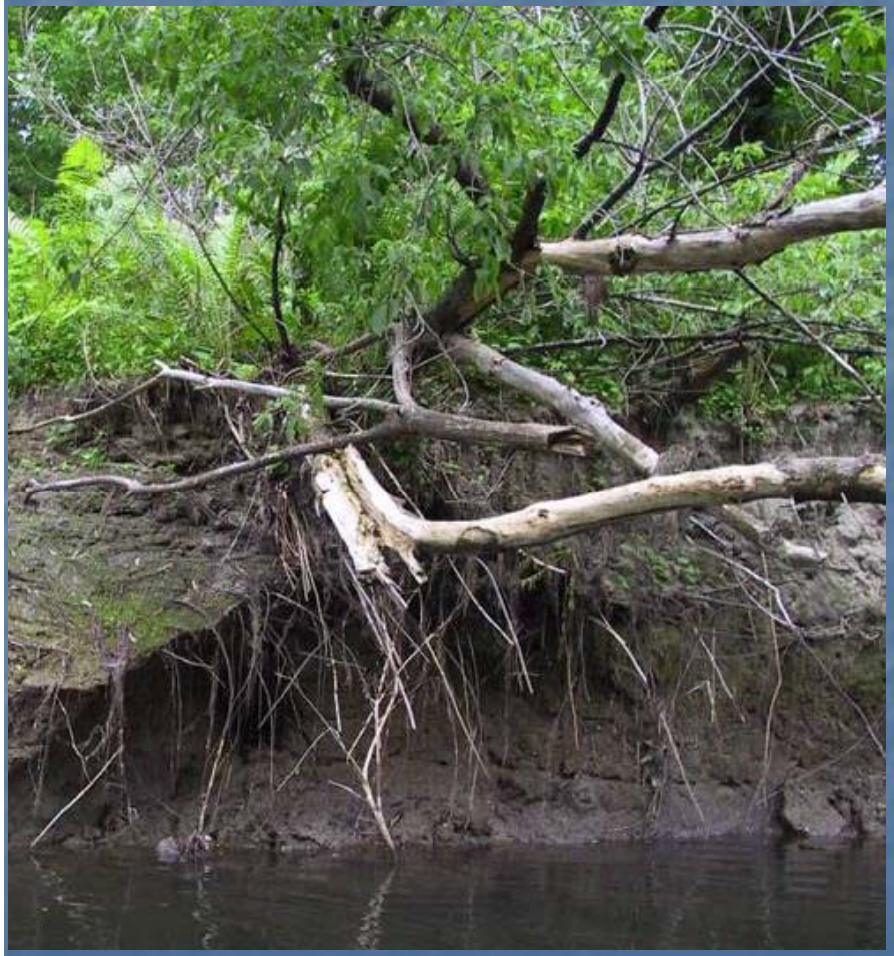
Public Outreach

- EPA has a third-party consultant (Certus) conducting interviews with stakeholders
- These interviews lay the groundwork for a series of mini-workshops and a “charrette”
- A charrette provides an opportunity –
  - for the public to interact with EPA regarding their views on the remedial alternatives
  - to develop an understanding of how EPA must make its decision
- The charrette will be held during EPA’s decision-making process
- In addition to the charrette, as in the past, EPA will be available upon request to discuss issues of concern with stakeholders

Schedule for Charrette Activities

- 3 Consecutive Mini Workshops
  - April 5th, 6th, and 7th
- Culminating Charrette
  - May 7th
- Location – Shakespeare & Company, Lenox

Remedy Selection Process



EPA Internal Review/Decision-making – Spring/Summer 2011

- EPA Region I "Management Review" of Proposed Remedy
- EPA National Remedy Review Board (RRB)
  - Stakeholder groups can submit written comments (up to 10 pages) on the RCMS for RRB consideration
  - Includes coordination by RRB with EPA national Contaminated Sediments Technical Advisory Group (CSTAG)

Remedy Selection Process (continued)

- EPA issues its Proposed Remedy for public comment – target - fall 2011
- Formal Public Comment Period and EPA outreach
- EPA Notifies GE of Intended Final Decision
  - Potential dispute resolution
- EPA issues RCRA Permit Modification ("Remedy Selection"), including response to Public Comments

Remedy Selection Process (continued)

- Public/GE have right of appeal (EAB and US Court of Appeals)
- GE must proceed w/ design of components of the remedy that are not subject to appeal
- EPA may proceed w/ design of components that are appealed (must offer opportunity to GE)
  - If appeal is denied, GE must pay EPA costs
- Once appeals are resolved, GE must design, construct, and pay for the remedy that is upheld
- Implemented as a Superfund remedy

FOR MORE INFORMATION GO TO –

www.epa.gov/ne/ge

Or contact me at svirsky.susan@epa.gov

Outreach Program Purpose

Housatonic Rest of River is the term used in the Consent Decree to describe the investigation and decision making process for the Housatonic River from the confluence of the East and West Branch downstream into Connecticut. Under the terms of the Consent Decree, EPA conducted studies and investigations to support the Agency in developing Human Health and Ecological Risk Assessments and in performing a Modeling Study of the hydrodynamics, sediment transport, and PCB fate and bioaccumulation in the river. The reports from these activities underwent formal external Peer Review. Following the RCRA process outlined in the Reissued RCRA Permit (Appendix G to the Consent Decree) GE prepared a Supplemental RCRA Facility Investigation Report, and proposed interim cleanup goals for the Rest of River upon completion of the risk assessment Peer Reviews. GE submitted a proposal for evaluating cleanup alternatives and, after EPA conditional approval of this proposal, GE evaluated cleanup alternatives (corrective measures) for the Rest of River, including a no action scenario. EPA will then propose a selected alternative for public comment.

EPA is beginning its decision-making process for the cleanup of the Housatonic Rest of River. In doing so, EPA is considering the information presented in the Revised Corrective Measures Study (RCMS) submitted by GE in October of 2010, as well as public input and other information as necessary. The purpose of the RCMS was to evaluate potentially applicable technologies and cleanup alternatives for the Rest of River to reduce risk to human health and the environment from PCBs, and to prevent further downstream transport of PCBs.

There are three categories of actions being evaluated:

- Management of in-place sediment and riverbank soil (the SED alternatives),
- Management of in-place floodplain soil (the FP alternatives), and
- Treatment and disposition (TD alternatives).

These actions are evaluated against nine criteria specified in the Revised RCRA Permit. In addition, the RCMS contains GE's recommendation as to which alternative it believes best meets the criteria and objectives. GE concluded that either Monitored Natural Recovery (SED 2 and FP1) or the combination of SED 10/FP9, and onsite disposal of contaminated sediment and soil in a local landfill best met the criteria.

Now EPA is evaluating the alternatives and combinations of alternatives against the criteria to determine which cleanup plan EPA believes best meets the criteria.

EPA's consultants held a series of interviews with stakeholders over the past few months regarding their view of the process and information needs.

One of the outcomes of these interviews is this series of mini workshops and the all-day hands-on session scheduled for May 7 for stakeholders to learn and interact regarding the Rest of River cleanup. The purpose if these meetings are to

- Provide the community with -
    - an understanding of the work that EPA (and others) have done on the Rest of River
    - an understanding of how the river works and it is affected by the PCB contamination
    - an opportunity to get their questions answered
    - Result - Stakeholders have a better understanding of the issues associated with any cleanup of the Housatonic River

After public comment, EPA will finalize the corrective measure(s) to be implemented for the Rest of River. GE and/or the public may then appeal EPA's decision to the EPA Environmental Appeals Board, and then to the Federal Court of Appeals. As specified in the Consent Decree, upon completion of all appeals, the remedy that was upheld will be implemented by GE as a CERCLA action.

LEARN MORE AT: www.epa.gov/region1/ge

Cleanup Alternatives in the Revised CMS

THE RIVER *The Housatonic River is contaminated with polychlorinated biphenyls (PCBs) and other hazardous substances released from the General Electric Company (GE) facility in Pittsfield, MA. The entire site consists of the 254-acre GE facility; the Housatonic River and its banks and floodplains from Pittsfield, downstream through Massachusetts and Connecticut; and other contaminated areas. Under a federal Consent Decree, GE is required to address contamination throughout the site, including in the River.*

SUMMARY:

EPA is beginning its decision-making process for the cleanup of the Housatonic Rest of River. In doing so, EPA is considering the information presented in the Revised Corrective Measures Study (CMS) submitted by GE in October of 2010. The purpose of the Revised CMS was to evaluate potentially applicable cleanup alternatives for the Rest of River to reduce risk to human health and the environment from PCBs, and to prevent further downstream transport of PCBs.

There are three categories of actions being evaluated:

- Management of in-place sediment and riverbank soil (the SED alternatives),
- Management of in-place floodplain soil (the FP alternatives), and
- Treatment and disposition (TD alternatives).

These actions are evaluated against nine criteria specified in the RCRA Permit. Now EPA is evaluating the alternatives and combinations of alternatives against the criteria to determine which cleanup plan EPA believes best meets the criteria. For information regarding the evaluation criteria, see the fact sheet "EPA's Cleanup Decision Process".

This fact sheet summarizes the alternatives that were outlined and evaluated in the Revised CMS.

WHERE IS THE REST OF RIVER?

For the purposes of evaluation and discussion in the EPA studies and the Revised CMS, the River has been divided into 17 reaches. The area known as the "Rest of River" begins at Reach 5 and includes the main stem of the Housatonic River and its floodplain from the Confluence of the East and West Branches in Pittsfield, MA, downstream to the Derby-Shelton Dam in CT, which is the downstream end of Reach 16 (see map), a distance of approximately 135 miles.

WHAT IS THE REVISED CMS?

The purpose of the Revised Corrective Measures Study (CMS) performed by GE, as required under the Consent Decree (CD), was to evaluate potentially applicable technologies and cleanup alternatives for the Rest of River to reduce risk to human health and the environment from exposure to PCBs. The Revised CMS for Rest of River describes the technologies to be considered, the range of alternatives to be evaluated, and the process and criteria used for evaluation.

The various technologies that were retained after screening in the CMS Proposal are applicable to one or more of three categories of remedial actions:

- In-place sediment and riverbank soil
- In-place floodplain soil
- Treatment and disposition (materials that have been removed)

Estimates of the costs, volumes of sediment/soil, and PCB mass associated with the various alternatives were provided by GE in the Revised CMS, and are summarized in this Fact Sheet.

continued >

KEY CONTACTS:

JIM MURPHY
U.S. EPA Community Involvement Coordinator
(617) 918-1028
murphy.jim@epa.gov

SUSAN SVIRSKY
U.S. EPA Rest of River Project Manager
(617) 918-1434
svirsky.susan@epa.gov

GENERAL INFO:

EPA NEW ENGLAND
5 Post Office Sq.,
Suite 100
Boston, MA 02109-3912

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April 2011

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GENERAL ELECTRIC'S SUMMARY OF SEDIMENT ALTERNATIVES

Alt.	Reach 5A	Reach 5B	Reach 5A/5B Banks	Reach 5C	Reach 5 Backwaters	Reach 6 (Woods Pond)	Reach 7 Impoundments	Reach 7 Channel	Reach 8 (Rising Pond)	Reaches 9 - 16
SED 1	No action	No action	No action	No action	No action	No action	No action	No action	No action	No action
SED 2	MNR	MNR	MNR	MNR	MNR	MNR	MNR	MNR	MNR	MNR
SED 3	2-foot removal with capping	MNR	Stabilization/ bank soil removal	Combination of thin-layer capping and MNR	MNR	Thin-layer capping	MNR	MNR	MNR	MNR
SED 4	2-foot removal with capping	Combination of 2-foot removal with capping and thin-layer capping (dep. on depth & velocity)	Stabilization/ bank soil removal	Combination of thin-layer capping (in shallow and depositional areas) and capping (in deeper areas)	Combination of thin-layer capping and MNR	Combination of 1.5-foot removal with capping in shallow areas and thin-layer capping in deep area	MNR	MNR	MNR	MNR
SED 5	2-foot removal with capping	2-foot removal with capping	Stabilization/ bank soil removal	Combination of 2-foot removal with capping (in shallow areas) and capping (in deeper areas)	Combination of thin-layer capping and MNR	Combination of 1.5-foot removal with capping in shallow areas and capping in deep area	MNR	MNR	Thin-layer capping	MNR
SED 6	2-foot removal with capping	2-foot removal with capping	Stabilization/ bank soil removal	2-foot removal with capping	Removal of sediments >50 mg/kg in top 1 foot (with capping[2]); thin-layer capping for remainder >1 mg/kg	Combination of 1.5-foot removal with capping in shallow areas and capping in deep area	Thin-layer capping	MNR	Combination of thin-layer capping in shallow areas and capping in deep areas	MNR
SED 7	3- to 3.5-foot removal with backfill	2.5-foot removal with backfill	Stabilization/ bank soil removal	2-foot removal with capping	Removal of sediments >10 mg/kg in top 1 foot (with capping[2]); thin-layer capping for remainder >1 mg/kg	Combination of 2.5-foot removal with capping in shallow areas and capping in deep area	Removal of higher PCB levels (e.g., >3 mg/kg) in top 1.5 feet (with capping[2]); thin-layer capping for remainder >1 mg/kg	MNR	Comb. of removal of higher PCB levels (e.g., >3 mg/kg) in top 1.5 feet (with capping[2]) & thin-layer capping in shallow areas and capping in deep areas	MNR
SED 8	Removal to 1 mg/kg depth horizon with backfill	Removal to 1 mg/kg depth horizon with backfill	Stabilization/ bank soil removal	Removal to 1 mg/kg depth horizon with backfill	Removal to 1 mg/kg depth horizon with backfill	Removal to 1 mg/kg depth horizon with Backfill	Removal to 1 mg/kg depth horizon with backfill	MNR	Removal to 1 mg/kg depth horizon with backfill	MNR
SED 9	2-foot removal with capping	2-foot removal with capping	Stabilization/ bank soil removal	Combination of 2-foot removal with capping (in shallow areas) and 1.5-foot removal with capping (in deeper areas)	In areas with sediments >1 mg/kg, combination of 1-foot removal with capping (areas with water < 4 feet) and capping w/o removal (areas with water > 4 feet)	Combination of 3.5-foot removal with 1-foot cap in shallow areas and 1-foot removal with capping to grade in deep area	Combination of 1.5-foot removal with capping (in areas of high bottom shear stress) and 1-foot removal with capping (in areas of low bottom shear stress)	MNR	Combination of 1.5-foot removal with capping (in areas of high bottom shear stress) and 1-foot removal with capping (in areas of low bottom shear stress	MNR
SED 10	2-foot removal with capping in select areas; MNR in remaining areas	MNR	Stabilization/ bank soil removal in select areas	MNR	MNR	2.5-foot removal where sediments generally >13 mg/kg in top 6 inches; MNR in remainder	MNR	MNR	MNR	MNR

MNR Monitored Natural Recovery, mg/kg milligram per kilogram.

GENERAL ELECTRIC'S SUMMARY OF SEDIMENT ALTERNATIVE VOLUMES, AREAS, AND DURATIONS

	SED 1/2	SED 3	SED 4	SED 5	SED 6	SED 7	SED 8	SED 9	SED 10
Sediment removal volume (cubic yards [cy])	0	134,000	262,000	377,000	521,000	770,000	2,252,000	886,000	235,000
Bank soil removal volume (cy)	0	35,000	35,000	35,000	35,000	35,000	35,000	35,000	6,700
Capping after removal (acres)	0	42	91	126	178	150	0	333	20
Backfill after removal (acres)	0	0	0	0	0	69	351	0	0
Capping without removal (acres)	0	0	37	60	45	45	0	3	0
Thin-layer capping (acres)	0	97	119	102	112	72	0	0	0
Time to implement (years)	0	10	15	18	21	26	52	14	5
Note: MNR would be a component of all alternatives except SED 1.									

GENERAL ELECTRIC'S SUMMARY OF FLOODPLAIN ALTERNATIVES

Alternative	Description
FP 1	No action.
FP 2	Soil removal/backfilling to achieve the health-based IMPGs based on 10-4 cancer risk or on non-cancer (whichever is lower).
FP 3	Same as FP 2 except: (a) in certain frequently used areas, soil removal/backfilling to achieve the health-based IMPGs based on 10-5 cancer risk or on non-cancer (whichever is lower); and (b) supplemental remediation to achieve upper-bound IMPGs for ecological receptors.
FP 4	Soil removal/backfilling to achieve the health-based IMPGs based on 10-5 cancer risk or on non-cancer (whichever is lower). Supplemental remediation to achieve upper-bound IMPGs for ecological receptors.
FP 5	Removal of soils that contain PCB concentrations of 50 mg/kg or greater, with backfilling.
FP 6	Removal of soils that contain PCB concentrations of 25 mg/kg or greater, with backfilling.
FP 7	Soil removal/backfilling to achieve the health-based IMPGs based on 10-6 cancer risk , but no lower than 2mg/kg for direct human contact (level specified in Consent Decree as the standard for residential use). Supplemental remediation to achieve lower-bound IMPGs for ecological receptors.
FP 8	Soil removal/backfilling to achieve the health-based IMPGs based on 10-5 cancer risk or on non-cancer (whichever is lower). Supplemental remediation in vernal pools to achieve lower-bound IMPG for amphibians. Additional removal of all remaining soils that contain PCB concentrations of 50 mg/kg or greater, with backfilling.
FP 9	Same as FP2 with additional soil removal/backfilling to achieve the health-based RME IMPGs based on 10-4 cancer risk or on non-cancer (whichever is lower) in top 3 feet in certain heavily used subareas.

Notes: 1. The health-based IMPGs refer to the IMPGs that were based on EPA's "Reasonable Maximum Exposure"assumptions in its Human Health Risk Assessment. 2. For all alternatives, the remediation described applies to the top foot of soil, except that FP3 through FP 9 also involve additional remediation in certain heavily used subareas as necessary to achieve criteria in the top 3 feet of soil.

GENERAL ELECTRIC'S SUMMARY OF FLOODPLAIN ALTERNATIVE VOLUMES AND AREAS

	FP1	FP2	FP3	FP4	FP5	FP6	FP7	FP8	FP9
Removal volume (cy)	0	22,000	74,000	121,000	104,000	320,000	631,000	177,000	26,000
Removal area (acres)	0	13	44	72	63	197	387	108	14

GENERAL ELECTRIC'S COST ESTIMATES FOR SED/FP/TD COMBINATIONS

Alternative	TD1	TD2[2]	TD3[3]	TD4	TD5[4]
	Off-Site Disposal	Confined Disposal Facility	Upland Disposal Facility	Chemical Extraction	Thermal Desorption
SED 2/FP 1	$5 M	NA	$5 M	$5 M	$5 M
SED 3/FP 3	$251 M	NA	$204 - 228 M	$274 M	$337 - 366 M
SED 5/FP 4	$483 M	NA	$362 - 402 M	$509 M	$679 - 709 M
SED 6/FP4	$612 M	$487 M	$444 - 493 M	$619 M	$860 - 891 M
SED 8/FP7	$1,740 M	$1,337 M	$1,160 M	$1,826 M	$2,866 - 3,026 M
SED 9/FP8	$729 M	$558 M	$435 - 512 M	$662 M	$1,132 - 1,175 M
SED 10/FP 9	$183 M	NA	$121 - 146 M	$181 M	$283 - 290 M

[1.] Cost are give in 2010 dollars; $M = million dollars [2.] Where applicable, estimated costs assume placement in CDFs of certain hydraulically dredged sediments and off-site disposal for remaining excavated materials. [3.] Range depends on location of Upland Disposal Facility. For sediment-floodplain alternatives in which the removal volume exceeds the capacity of the Upland Disposal Facility at a given location, cost estimates were made only for the location(s) where that entire volume of material could be disposed of. [4.] Low end of range assumes reuse in floodplain of half of treated floodplain soils and off-site disposal of remaining treated materials; high end of range assumes off-site disposal of all treated material.

TECHNOLOGIES EVALUATED IN THE REVISED CMS

Technologies retained in the initial screening that were considered in the Revised CMS are described below. Many of these technologies can be applied to in-place sediment, riverbanks, and floodplain soil. The treatment and disposition technologies apply to material after it has been removed from the river, banks, or floodplain. All alternatives (except No Action) possibly will require engineering and/or institutional controls. All alternatives include a restoration (except NA and MNR), operation, maintenance and monitoring component (except NA).

No Action

The No Action (NA) response does not include any active or passive remediation or long-term monitoring. EPA requires that a No Action response be considered at every site.

Engineering/Institutional Controls

There are four general types of institutional controls to reduce exposure to humans: 1. governmental (e.g., fish advisories); 2. proprietary (e.g., deed restriction); 3. enforcement (e.g., provisions in the CD); and 4. informational (e.g., public education).

Monitored Natural Recovery (MNR)

MNR is a response action that relies on ongoing, naturally occurring processes (including physical, biological, and/or chemical mechanisms) to contain, destroy, or otherwise reduce the bioavailability or toxicity of contaminants in sediment, with monitoring to assess the rate of recovery. MNR may also include enhancements, such as thin-layer capping, to accelerate the rate of recovery.

Removal

Removal techniques include mechanical excavation in the "dry" as was performed for the 2 miles of the East Branch that have already been cleaned up, or removal in the "wet," commonly referred to as dredging. Excavation in the dry is typically performed using conventional excavation equipment. Dredging may be conducted using either mechanical or hydraulic equipment. Removal of sediment or bank/floodplain soil often is coupled with backfilling using clean material to meet original elevations and contain any residual PCBs, and also requires one or more treatment and disposition alternatives for implementation.

Capping

This technology requires the placement of a layer of clean material over the in-place contaminated sediment/soil, at a thickness suitable to create a clean bioavailable zone and to isolate the contaminated material. Depending on site-specific objectives, the cap design may include materials to enhance the isolation (e.g., geotextile, organoclay) or sorption of contaminants (e.g., organic carbon), and a protective layer (e.g., armor stone) to prevent erosion.

Bank Stabilization

Stabilization of the banks protects in-place contaminated bank soil from erosion. Stabilization techniques range from bioengineering to hard engineering (e.g., armor stone), and the use of a particular technique is dependent on bank slope/stability and water velocities.

Dewatering/Water Treatment

Dewatering and/or water treatment is often a necessary step in the handling of materials that are removed, particularly sediment, to facilitate treatment and/or disposal of the material.

Chemical Extraction

Mechanical separation methods combined with an extraction fluid can potentially be used to desorb PCBs from sediment/soil after removal, resulting in a large reduction in the volume of contaminated material. At EPA's request, GE performed a study of the effectiveness and implementability of this technology on site-specific sediment and soil samples. The potential for reuse of the material after treatment is a significant consideration with this technology.

Thermal Desorption

Thermal desorption separates the PCBs from the sediment/soil by adding heat to the material. The heat then volatilizes the PCBs, which are then condensed as a liquid, captured, and/or destroyed in an afterburner, resulting in a large reduction in the volume of contaminated material. The potential for reuse of the material after treatment is a significant consideration with this technology.

Confined Disposal Facility (CDF)

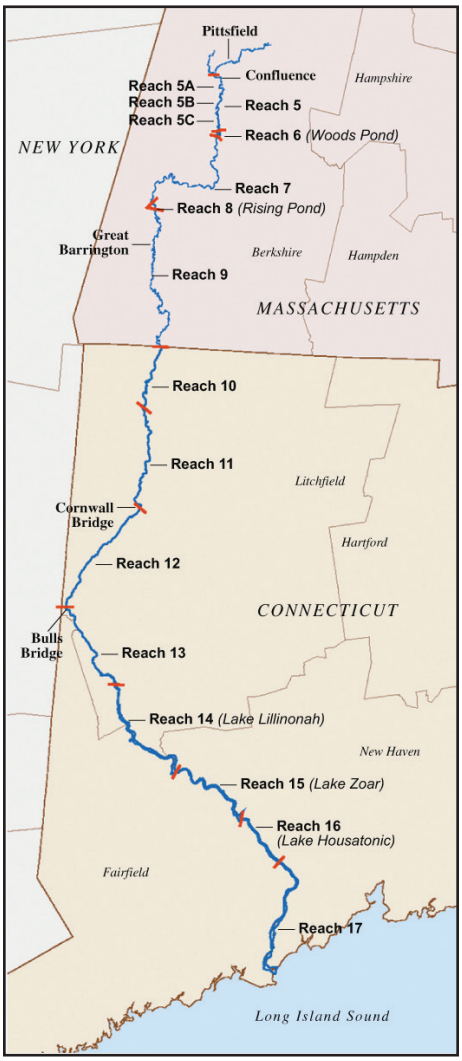
CDFs involve the placement of contaminated sediment/soil in an engineered structure constructed in a nearshore environment in such a way as to permanently isolate the PCBs from the environment.

Upland Disposal Facility

After dewatering, sediment/soil would be placed in an engineered upland landfill typically constructed in close proximity to the river but outside the floodplain. The facility is engineered appropriately to permanently isolate the PCBs.

Off-Site Disposal Facility

After dewatering and pretreatment to achieve other requirements of the disposal facility, sediment/soil would be transported to an existing, licensed off-site approved landfill by truck or rail.



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GE/Housatonic River Site MA/CT

U.S. EPA | HAZARDOUS WASTE PROGRAM AT EPA NEW ENGLAND

THE SUPERFUND PROGRAM *protects human health and the environment by investigating and cleaning up often-abandoned hazardous waste sites and engaging communities throughout the process. Many of these sites are complex and need long-term cleanup actions. Those responsible for contamination are held liable for cleanup costs. EPA strives to return previously contaminated land and groundwater to productive use.*

SITE DESCRIPTION:

PCBs (polychlorinated biphenyls) released from the General Electric facility in Pittsfield, Massachusetts since the 1930's are widespread throughout the Housatonic River and its floodplain, and are found in water, sediment, river banks, floodplain soil, and in both aquatic and terrestrial animals.

INTRODUCTION:

This Fact Sheet summarizes some of the important properties of PCBs as they relate to fate and transport in the Rest of River and shows how the Housatonic River Model Framework is being used to evaluate remedial alternatives. It also provides a concise summary of the effects of PCBs on human health and ecological receptors as demonstrated by the peer-reviewed Human Health and Ecological Risk Assessments. General Electric recently submitted their Revised Corrective Measures Study (RCMS) Report for the Housatonic River Rest of River site. EPA will use the information provided in the CMS, along with other information, including citizen and other stakeholder comments, to develop EPA's preferred approach to addressing PCB contamination in the river and floodplain. EPA welcomes and encourages input from stakeholders and believes that providing this information in a concise fact sheet format will be of use in their review of GE's Revised CMS and EPA's subsequent proposal.

- PCBs are classified as probable human carcinogens.
- PCBs are associated with numerous non-cancer health effects, including neurological, immune, endocrine and reproductive issues.
- PCBs are known to cause adverse effects on numerous Housatonic River ecological receptors, including fish-eating mammals, some birds, fish, amphibians, and benthic invertebrates.
- PCBs are present in large quantities in river sediment and floodplain soil; estimates range from between 100,000 to nearly 600,000 pounds of PCBs.
- The rate of natural degradation of the type of PCBs in the Housatonic River is very slow – on the scale of hundreds of years.
- Currently, more than 50% of the PCBs that enter Woods Pond go over the dam and continue downstream, even into Connecticut.

EPA will be proposing an approach to clean up the PCBs in the Rest of River to protect human health and the environment after the public provides their comments to EPA on GE's Revised Corrective Measures Study. This Fact Sheet reviews what PCBs are and how they move through the environment, and summarizes what EPA knows about the PCBs in the Housatonic River system and their effects.

WHAT ARE PCBs?

PCBs are a group of man-made organic chemicals consisting of carbon, hydrogen, and chlorine atoms. The

continued >

KEY CONTACTS:

JIM MURPHY
U.S. EPA Community Involvement Coordinator
(617) 918-1028
murphy.jim@epa.gov

SUSAN SVIRSKY
U.S. EPA Rest of River Project Manager
(617) 918-1434
svirsky.susan@epa.gov

GENERAL INFO:

EPA NEW ENGLAND
5 Post Office Sq.,
Suite 100
Boston, MA 02109-3912

TOLL-FREE CUSTOMER SERVICE
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number of chlorine atoms and their location in a PCB molecule determine many of its physical and chemical properties. PCBs have no known taste or smell, and range in consistency from an oil to a waxy solid.

PCBs were manufactured in the US from 1929 until their manufacture was banned in 1979. Due to their non-flammability, chemical stability, high boiling point, and electrical insulating properties, PCBs were used in hundreds of industrial and commercial applications including electrical, heat transfer, and hydraulic equipment; as plasticizers in paints, plastics, and rubber products; in pigments, dyes, and carbonless copy paper; and many other industrial applications.

PCBs are a mixture of molecules that contain 12 carbon atoms and a varying number of hydrogen and chlorine atoms. The different combinations of these atoms result in 209 possible PCB molecules, which are called congeners. Some of these congeners have toxicological properties that are similar to those of dioxin.

Aroclor is the trade name used by the Monsanto Company for most of the commercial PCB mixtures created in the United States. Aroclors are mixtures of PCB congeners that were created to have different physical properties, which in turn are largely determined by the amount of chlorine in the overall mixture. These were sold in the US under the name Aroclor followed by a 4-digit number. The first two digits represent the number of carbon atoms (12); the second two digits indicate the percentage of chlorine by mass in the mixture. For example, Aroclor 1260 contains 60% chlorine by mass. Aroclors with lower numbers are "light" oily liquids, while at the higher end they have a "heavier," more waxy form.

The differences between Aroclors can be pronounced; for example, the lighter Aroclor 1242 is made up of 60% of the lighter and less harmful congeners, while the heavier Aroclors 1254 and 1260 (the types of PCBs found in the Housatonic River) have only traces (2% or less) of these more soluble and volatile congeners.

HOW DO PCBs ENTER AND MOVE IN THE ENVIRONMENT?

PCBs entered the air, water, and soil during their manufacture, use, and disposal; from spills and leaks during their transport; and from leaks in products containing PCBs.

WHAT HAPPENS TO PCBs IN THE RIVER DURING STORMS?

Periodic storms, or floods, are a major factor controlling the fate and transport of sediment and bank soil and the associated PCBs in the Housatonic River.

The river rises very quickly in response to storms in the watershed, and river flow can increase dramatically in a matter of a few hours. These events mobilize contaminated sediment from the bottom of the river, erode PCB-contaminated river banks, and transport the sediment, soil, and associated PCBs downstream.

In addition, "out of bank" events, where the amount of water exceeds the amount that can be contained in the river channel, force water and associated sediment/soil and PCBs to flow out onto the floodplain. This is how the PCBs have been, and continue to be distributed throughout the river's 10-year floodplain (i.e., the extent of flooding that is anticipated to occur, on average, once in ten years). Once the water (with the suspended solids and associated PCBs) gets out on the floodplain, the solids and associated PCBs are trapped by the vegetation and settle out as the floodwaters recede, resulting in significant accumulation of PCBs in floodplain soil.

These out-of-bank events have occurred often enough to result in PCB concentrations in floodplain soil that pose risks to humans and to ecological receptors in the floodplain.

Once in the environment, most PCBs do not readily break down and may remain for very long periods of time. PCBs can travel long distances in the air and via suspended solids in water and be deposited in areas far from where they were originally released.

In water, a small amount of PCBs may be dissolved, but most stick to organic particles and soil/sediment. That is because soil and sediment consist not just of mineral particles, but also include organic carbon.

Each congener/PCB mixture has a different potential for degradation. In general, "lighter" PCBs have a higher degradation potential. The heavier PCBs, such as the ones in the Housatonic watershed (Aroclors 1254 and 1260), are more persistent in the environment because they are more resistant to volatilization, weathering, biodegradation and other mechanisms of degradation.

Many different types of natural degradation have been documented in PCB-contaminated sediment and soil; however, although some PCB congeners eventually degrade, the rate of degradation of the type of PCBs found in the Housatonic watershed is very slow, on the scale of hundreds of years.

UPTAKE OF PCBs BY BIOTA

PCBs in the environment are taken up by many animals and a few plants in a process known as bioaccumulation. Bioaccumulation can occur in wild populations and animals that are raised for food in both commercial and backyard operations. The rate of bioaccumulation and the concentration of PCBs in an organism depend on many factors, one of the most important being the amount of fat (lipid) in body. In general, organisms with high amounts of body fat will accumulate higher concentrations of PCBs than those with less fat. The vast majority of PCBs in any living organism will be found in the fat cells. Other factors controlling organism-specific bioaccumulation include life history and diet.

Studies show that while PCBs accumulate rapidly in most animals, they are slow to leave the body. Once they have entered the body, PCBs are moved to fat reservoirs where they tend to remain for long periods of time, typically for the life of the animal, reaching concentrations that may be many thousands of times higher than in water, sediment, or soil, a process known as biomagnification.

PCBs have been measured at very high concentrations in biota in the Housatonic River watershed, leading to consumption advisories for fish, frogs, turtles and waterfowl in MA, and fish in CT.

In contrast, most plants do not bioaccumulate PCBs from contaminated soil due to the presence of a waxy layer, or cuticle, which binds the PCBs

and prevents them from being absorbed into the plant. Some plants in the squash family appear to be able to accumulate PCBs from soil via their roots. Studies of tomatoes grown downwind from a PCB-contaminated sediment site demonstrated that lighter, more volatile, congeners released into the atmosphere can be taken up by the leaves and transported into edible portions of the plant. Generally, however, most of the PCBs remain on the surface of fruits and vegetables, often as part of the soil deposited by wind or rainwater splash clinging to the plant.

HOUSATONIC RIVER FATE & TRANSPORT MODEL

Mathematical models, run on computers using equations that simulate the important processes in the system being evaluated, are often used by scientists and engineers to evaluate the behavior of natural and engineered systems.

In the Housatonic River, EPA developed a model of sediment/PCB fate, transport, and bioaccumulation in the river that allows for relatively rapid and cost-effective evaluation of how the PCBs in the river behave in response to no action or various remedial alternatives for the river. EPA's model underwent rigorous testing through calibration and validation to ensure an independent check on model performance. The model also was subject to three Peer Reviews at various stages of development by independent scientific and engineering experts.

MODEL APPLICATION

The Housatonic River model is being used by GE and EPA to gain important insights into current and future conditions in the river and floodplain and in biota. By varying the model setup, any number of remedial scenarios can be simulated.

For example, Figure 1 shows the predicted concentration of PCBs in fish in Woods Pond over more than 50 years in the case of no action (SED1). In contrast, Figure 2 shows the reduction of PCB concentrations in fish with the cleanup of river sediment under SED 4. Figure 3 shows the reduction of PCB concentrations in fish with the cleanup of river sediment under SED 10. The model allows creation of similar output for the

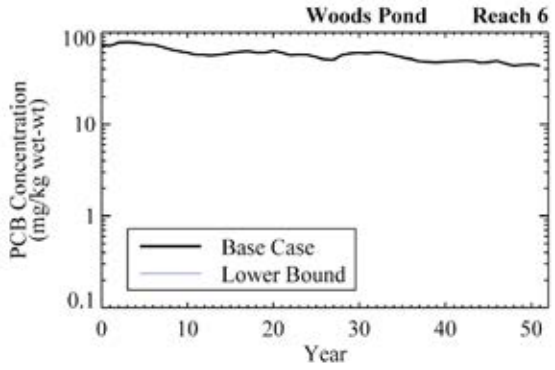

Figure 1: Average PCB concentration in largemouth bass (whole body) in Woods Pond under SED 1/SED 2.
Note: excerpted from Figure K-1.3-1 in GE's Revised Corrective Measures Study Report, October 2010.

10P-1115-1

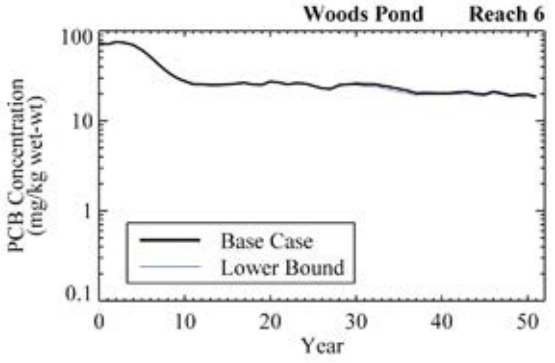

Figure 3: Average PCB concentration in largemouth bass (whole body) in Woods Pond under SED 10.
Note: excerpted from Figure K-1.3-9 in GE's Revised Corrective Measures Study Report, October 2010.

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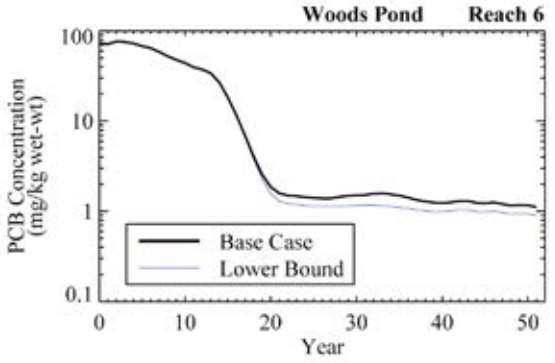


Figure 2: Average PCB concentration in largemouth bass (whole body) in Woods Pond under SED 4.
Note: excerpted from Figure K-1.3-3 in GE's Revised Corrective Measures Study Report, October 2010.

10P-1115-2

Please see GE's revised CMS Report for detailed descriptions and evaluations of the ten sediment alternatives. Three example alternatives are described below.

SED 1 No action in all reaches. SED 2 is monitored natural recovery (MNR) with institutional controls (i.e., consumption advisories), periodic fish sampling, water column monitoring, and sediment sampling.

SED 4 Sediment removal in Reach 5A; combination of sediment removal, engineered capping, and/or thin-layer capping in Reaches 5B and 5C and Woods Pond; thin-layer capping in portions of the Reach 5 backwaters. SED 4 includes stabilization of all riverbanks in Reaches 5A and 5B, with removal of bank soil as appropriate. In Reach 6 (Woods Pond) removal areas, an average of 1.5 feet of sediment would be removed, followed by placement of an engineered cap. The remainder of Reach 6 would have a thin-layer cap installed. Monitored natural recovery would be selected for remaining areas in the Reach 5 backwaters and in Reaches 7 through 16.

SED 10 would involve on average a 2-foot sediment removal followed by engineered capping in selected portions of Reach 5A. For Reaches 5A and 5B, selected riverbanks would be stabilized. In Woods Pond, selected areas of sediment with elevated PCB concentrations will be removed to an average depth of 2.5 feet. No caps or backfill material will be placed after sediment removal in Woods Pond. Monitored natural recovery would be selected for the remainder of the Rest of River.

THE ROLE OF IMPOUNDMENTS

The role of impoundments in a river system is important in the fate and transport of PCBs. Because the more highly chlorinated PCBs are not easily dissolved in water, they are primarily transported while attached to particles of suspended solids rather than dissolved in the water itself. These suspended particles fall out of the water at a constant rate whether the water is moving or relatively still in an impoundment behind a dam.

However, because the water remains in an impoundment longer than in the fast-running reaches, relatively more suspended sediment can settle to the bottom, resulting in some accumulation of PCBs in impoundments.

The Housatonic River fate and transport model clearly shows this trapping behavior of the impoundments on the river, but also shows that the trapping is far less than 100% effective. For example, less than one-half of the PCBs entering Woods Pond are trapped in the Pond, leaving the remaining PCBs to pass over Woods Pond Dam and be carried downstream.

various remedial options currently under consideration, showing the relative effectiveness of the various options in reducing PCBs in the system.

HEALTH EFFECTS FROM PCBs

PCBs have been demonstrated to cause a wide variety of adverse health effects. PCBs have been shown to cause cancer in animals. PCBs have also been shown to cause a number of serious non-cancer health effects in animals, including effects on the immune system, reproductive system, nervous system, endocrine system and other organs. Studies in humans provide supportive evidence for potential carcinogenic and non-carcinogenic effects of PCBs. The different health effects of PCBs may be interrelated, as alterations in one system may have significant implications for the other systems of the body. Some PCB congeners exhibit dioxin-like effects.

Cancer

Studies definitively show that PCBs cause cancer in animals. The data strongly suggest that PCBs are probable human carcinogens, and EPA and the International Agency for Research on Cancer have classified them as such.

Immune Effects

Studies in animals have revealed serious effects on the immune system following exposures to PCBs, including a significant decrease in size of the thymus gland, reductions in the response of the immune system following a challenge with sheep red blood cells (a test of the antibody response and protective immunity), and decreased resistance to Epstein-Barr virus and other infections. Immune effects were also noted in humans who experienced exposure to rice oil contaminated with PCBs, dibenzofurans and dioxins.

Reproductive Effects

Reproductive effects of PCBs have been studied in animal species. Potentially serious effects on the reproductive system were seen following exposures to PCB mixtures. Most significantly, PCB exposures were found to reduce the birth weight, conception rates, and live birth rates of monkeys and other species, and PCB exposure reduced sperm counts in rats. Effects in monkeys were long-lasting and were observed long after the dosing with PCBs occurred. Studies of reproductive effects have also been carried out in human populations exposed to PCBs. Children born to women who worked with PCBs in factories, and studies in fishing populations, showed decreased birth weight and a significant decrease in gestational age with increasing exposures to PCBs.

Neurological Effects

Effects of PCBs on nervous system development have been studied in animal species. Newborn monkeys exposed to PCBs showed persistent and significant deficits in neurological development, including visual recognition, short-term memory and learning. Studies in humans have suggested effects similar to those observed in monkeys exposed to PCBs, including learning deficits and changes in activity associated with exposures to PCBs.

Endocrine Effects

PCBs have been demonstrated to exert effects on thyroid hormone levels in animals and humans.

Other Non-cancer Effects

A variety of other non-cancer effects of PCBs have been reported in animals and humans, including skin and eye effects and liver toxicity. Elevations in blood pressure, serum triglyceride, and serum cholesterol have also been reported with increasing serum levels of PCBs in humans.

IN-PLACE (IN SITU) DEGRADATION

Considerable research, some of it conducted in and/or with sediment from Woods Pond, and soil from the watershed, has been done in an attempt to find ways to enhance natural degradation of PCBs, but to date no effective in situ methodology has been developed. In addition, many degradation pathways produce chemicals that are more toxic than the original PCB congeners. While enhanced natural degradation of PCBs remains an attractive potential treatment for PCBs in the environment, it is a potential that has yet to be realized for PCBs like those in the Housatonic River.

Effects to Ecological Receptors

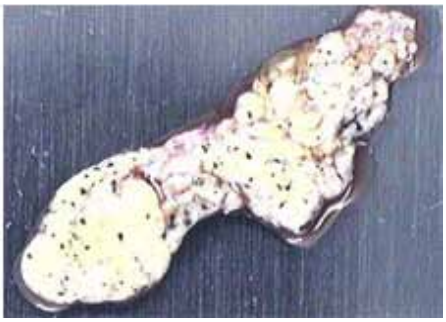
PCBs in the environment affect ecological receptors to varying degrees and in a variety of ways; these differences in the nature and extent of PCB effects depend in part on the specific PCB congeners present, as well as natural differences in basic physiological processes, diet, and life history among animal species. With the type of PCBs and concentrations measured in the Housatonic River and its floodplain, effects are considered likely. In a number of cases, significant adverse effects were documented in site-specific field and/or laboratory studies for the representative animal species evaluated in the Housatonic River Ecological Risk Assessment.

The known toxic effects of PCBs on aquatic species and wildlife include mortality, compromises in immune system function, and various adverse effects on reproduction, development, and endocrine function, in addition to a number of equally serious effects on other body systems. PCB exposure leads to a loss of liver function and death of liver tissue, and similar effects to the tissues and organs of the digestive system. The nervous systems of animals are also affected, with resultant depression of motor activity and decreased perception. Other effects include behavioral abnormalities, impaired reproduction, and developmental toxicity. PCBs have been demonstrated in laboratory studies to promote cancer in a number of animal species. In sufficient doses, PCB exposure can lead to acute mortality in aquatic and wildlife species, and chronic exposure to lower doses can also result in mortality, leading to changes in community and ecosystem structure and function.

Benthic Invertebrates

PCBs in sufficient concentrations, which are exceeded in sediment in some areas of Housatonic River, are acutely toxic to aquatic organisms, particularly benthic invertebrates at the base of the aquatic food chain. These effects are commonly expressed by the absence of species of known sensitivity to PCBs, and as alterations in the structure of the benthic community when the more-sensitive species are replaced by more pollution-tolerant organisms. Non-lethal effects of PCBs on benthic organisms include reduction in growth and number of offspring. All of these types of effects were clearly demonstrated in the site-specific studies conducted using Housatonic River sediment and well-established sediment toxicity testing organisms. In addition, benthic community impairment also corresponded to PCB sediment concentration.

Normal Leopard Frog Egg Mass



Egg Mass From Contaminated Vernal Pool

WHAT'S NEXT?

GE submitted its Revised Corrective Measures Study (RCMS) on October 12, 2010. The report includes GE's recommendations on which alternatives the company believes best meet the objectives and criteria specified for the Rest of River project. These recommendations do not necessarily reflect EPA's views on the alternative that best meets the criteria in the permit. The alternatives are to be evaluated using the nine criteria specified in the Revised RCRA Permit. The public currently has an opportunity to provide input to EPA on GE's RCMS. EPA is currently reviewing GE's RCMS, as well as GE's previous CMS submitted in March of 2008, and input from the public. After conducting its review and analyses, EPA will propose a cleanup plan for the Rest of River for public comment.

Fish

Fish from the Housatonic River that were captured and bred in captivity were shown to produce larvae with increased incidence of a wide variety of deformities, many of which are reported in the scientific literature to be related to PCB exposure. However, because of the large number of eggs fish produce and high natural mortality of the young, the effects of PCBs on the local fish populations do not appear to be significant.

Amphibians

Harmful effects can include damage to the reproductive organs of adults as well as decreased viability of offspring and life-threatening deformities in larvae. A number of reproductive effects such as deformed gonads (see pictures on page 5), impaired development, altered sex ratio, and larval deformities were observed in frogs and frog larvae exposed to PCBs from the Housatonic River floodplain vernal pools and backwaters.

Birds

PCB exposure has been demonstrated in species such as chickens and pheasants to cause decreased egg production and fertility with relatively low PCB exposure, and mortality with higher exposures. In contrast to the animal groups discussed above, however, some bird species such as hawks and finches appear to be less sensitive to the harmful effects of PCBs. Site-specific studies conducted on tree swallows, kingfishers, and robins in the Housatonic River study area did not identify severe effects as a result of PCB exposure. However, although no field study was conducted on wood ducks, measured exposures suggest that harm is likely for that species from dioxin-like PCBs. In addition, very high concentrations of PCBs were present in the migratory waterfowl sampled by EPA. Estimated exposure derived from their fish diet indicates the high probability of risk to fish eating birds such as osprey and bald eagles.

Piscivorous Mammals

Piscivorous (fish-eating) mammals such as mink and otter receive elevated exposure to PCBs with their diet of contaminated fish, due to bioaccumulation. In addition, certain piscivorous mammals, particularly mink, have been shown in the scientific literature to have unusually high sensitivity to the effects of PCBs.

In a carefully controlled dietary study conducted at the University of Michigan, the young (kits) of female mink fed a diet containing fish

Estimated Amount of PCBs in the Housatonic River and Floodplain

Housatonic River Sediment

	PCB Mass (lbs)
Channel - Confluence to Woods Pond	13,000 – 51,000
Backwaters	2,000 – 18,000
Woods Pond	3,000 – 29,000
Woods Pond Dam to Rising Pond Dam	3,900 – 14,000
Rising Pond Dam to CT Border	60 – 110
CT Border to Long Island Sound	120 – 5,000
Total	22,000 – 118,000

Housatonic River Floodplain Soil

	PCB Mass (lbs)
Confluence to Woods Pond	80,000 – 436,000
Woods Pond	350 – 4,800
Woods Pond Dam to Rising Pond	5,300 – 15,000
Rising Pond	30 - 90
Rising Pond Dam to CT Border	2,400 – 2,800
Total	89,000 – 460,000

collected from the Housatonic River were shown to suffer from increased significant increased mortality and developed jaw lesions that would lead to death in the wild due to inability to consume a normal diet.

This study was corroborated by the result of field investigations indicating the absence of resident reproducing mink and otter, despite the highly suitable habitat present in the river and floodplain.

FOR MORE INFORMATION

EPA contact:
Jim Murphy
EPA Community Involvement Coordinator
(617) 918-1028
murphy.jim@epa.gov

EPA Records Center
Boston, MA 02114
(617) 918-1440
www.epa.gov/region1/ge

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Cornwall Bridge, CT 06754
(860) 672-6678

Massachusetts Department
of Environmental Protection
Springfield, MA 01103
(413) 784-1100

Connecticut Department
of Environmental Protection
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(860) 424-3854

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Important update

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5 Post Office Sq.,
Suite 100
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Dear Friends,

It is my pleasure to welcome you to this important series of workshops regarding the Housatonic River. First, I would like to thank you for taking the time to participate in these important public engagement and education programs. I am keenly aware of the high level of interest in EPA's upcoming decision about the scope and type of work that will be required of GE in the "Rest of River" portion of the Housatonic, as the river winds south from Pittsfield through Berkshire County and Connecticut. I have been very impressed with everyone's commitment to the River and its connection to the people in the communities through which it flows. There is a lot at stake – including protecting the character of the Housatonic and making the right decisions for current and future generations to safely enjoy the river environment.

EPA has designed this series of workshops and subsequent charrette not only to help you better understand what we've learned about the River and the PCB contamination but to also help us better understand your views as we move forward in our decision-making process. I am committed to making decisions based on sound science, and based on the best available information. I am also committed to an open, inclusive and transparent process that allows the communities of the Berkshires and Connecticut to weigh in with their concerns and priorities. These workshops are important steps towards that goal.

EPA hopes to use what we learn from you and others at these workshops to aid in our ongoing evaluation of cleanup options. We also hope that, through this process, you gain a broader understanding of the numerous technical and policy issues at hand. After EPA issues our formal cleanup proposal, all members of the public will, once again, have an opportunity to comment on the proposal. EPA will then review those comments and make our final cleanup decision. I will ensure that whatever plan EPA ultimately decides is best, it will be implemented by GE in a manner that is sensitive to the unique character of the river and to the community.

Thank you again for attending and I hope you find these workshops informative and worthwhile.

Curt Spalding
Regional Administrator

LEARN MORE AT: www.epa.gov/region1/ge

United States Environmental Protection Agency
5 Post Office Sq.,
Suite 100
Boston, MA 02109-3912

Dear Friends,

Once again, it is my pleasure to welcome you to this important event regarding the Housatonic River. First, I would like to thank you for taking the time to participate in these important public engagement and education programs. I am keenly aware of the high level of interest in EPA's upcoming decision about the scope and type of work that will be required of GE in the "Rest of River" portion of the Housatonic, as the river winds south from Pittsfield through Berkshire County and Connecticut. I have been very impressed with everyone's commitment to the River and its connection to the people in the communities through which it flows. There is a lot at stake – including protecting the character of the Housatonic and making the right decisions for current and future generations to safely enjoy the river environment.

EPA designed the series of workshops held in April and today's charrette not only to help you better understand what we've learned about the River and the PCB contamination but to also help us better understand your views as we move forward in our decision-making process. I am committed to making decisions based on sound science, and based on the best available information. I am also committed to an open, inclusive and transparent process that allows the communities of the Berkshires and Connecticut to weigh in with their concerns and priorities. Today's charrette is another important step towards that goal.

EPA hopes to use what we learn from you and others to aid in our ongoing evaluation of cleanup options. We also hope that, through this process, you gain a broader understanding of the numerous technical and policy issues at hand. After EPA issues our formal cleanup proposal, all members of the public will, once again, have an opportunity to comment on the proposal. EPA will then review those comments and make our final cleanup decision. I will ensure that whatever plan EPA ultimately decides is best, it will be implemented by GE in a manner that is sensitive to the unique character of the river and to the community.

Thank you again for attending and I hope you find the hands-on workshops that are part of today's agenda informative and worthwhile.

Curt Spalding
Regional Administrator